The Builder.

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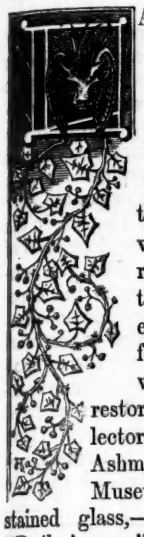


LAMBETH has long been famous for its pottery, but it was never so much so as now,—thanks, above all things, to the extended use of pipes in drainage. A visit to Messrs. Doulton's, Mr. Stephen Green's, or one of the other Potteries in Lambeth, would astonish most of our readers. Such as may wend their way thither with instructed eyes, will find the neighbourhood full of interest. Of the Palace we spoke not long ago, with the restored church, the tomb of the collector Tradescant, the slab to Elias Ashmole, founder of the Ashmolean Museum, the Pedlar and his dog, in stained glass,—connected traditionally with "Pedlar's-acre," a portion of the Marsh,—and other memorials. The ferry here is of great antiquity. The pedestrian will stop near the Palace-gateway to notice the view obtained there of the Victoria Tower, and the Houses of Parliament. When the sun is shining, and the river full, the structure there looks its best. Some of the houses near the church are older than the time of Queen Elizabeth. In the little coffee-shop opposite the churchyard, there is a richly ornamented ceiling of that date, a remnant of one of the noble houses which formerly occupied this site. In times past, this house was much frequented by the Welsh, and some who are living, it is said, remember a Welsh fair being held there. The panelling is old, and part of the walls very massive: in the kitchen is a fire-place of large size. In the upper part of these premises the leading of the windows still remains: in one room the mantel-piece is ornamented with carved flowers. Returning over more towards the Thames, the visitor will find a narrow, ill-paved, and worse swept street, running westward towards Vauxhall-bridge, connected with which, on the side farthest from the river, are some miserably-neglected spots: worse will not be met with in London. The drainage is either deficient or altogether wanting. Some of the houses are of large size, and have formerly been places of importance, but the majority are small, ill-built, and dilapidated. In one narrow passage, not more than 4 feet wide, the houses are thickly occupied, the closet, with an open cesspool, is placed between the two windows; the people have some distance to go for water, and, as we need scarcely say, sickness is often to be found. The smell when we visited it was frightful.

The inhabitants about here are, for the most part, very poor. Some appear to earn a trifle by gathering up the refuse along the river banks. It is the dinner-hour, and hundreds of boys, white as millers, are amusing themselves in various ways. Some are chasing stray pigs, animals ominous of ill-condition. The white-coated boys are employed in the potteries, which are situated amongst the houses, and extend from Lambeth-ferry to near Vauxhall-bridge. The manufacture, which is produced here in immense quantities, consists chiefly of what is called Stoneware, of various degrees of firmness, from the common drain-pipes to the finest jars for chemical purposes.

Until within the last thirty years the description of pottery known as salt-glazed stoneware was manufactured on a comparatively small scale, and its application was very limited: it was almost confined, indeed, to spirit and oil bottles. Within that time, however, many improvements have been made; and by the employment of machinery the material has become available for numerous purposes, and the trade has enormously increased. The quantity of drain-pipes made in England is said to average forty miles a week! And of these, probably one-third is made in Lambeth. This part of the trade has grown up wholly within the last ten years. Beginning at the beginning in one of the establishments we have named, you will find several huge stacks of white clay, in square blocks, each weighing about a quarter of a hundred weight. Examination shows that the clay is of different qualities and colour: it is brought chiefly from Devonshire, Cornwall, and Dorsetshire, to be mixed or used separately, according to circumstances. For the best descriptions of ware some of the very fine earth used in making china is added. The clay from Dorset and Devon contains a large proportion of silica,—fully two-thirds of the whole bulk,—less than a third being alumina, with a small quantity of iron and lime in combination. Other clays are brought from various parts of the country, and the whole may be divided into three classes: 1st. That used for small ware, or vessels not exceeding in capacity two or three quarts. 2nd. That used for vessels of a larger capacity, say up to six or eight gallons; and, lastly, that used for the manufacture of large chemical vessels, some of which have been made by Mr. Green to hold upwards of 400 gallons.

The clay having been landed, it is allowed to remain for some time in drying-rooms, until the moisture is evaporated; and when the lumps have a dry and white appearance, and are what is technically called "white hard," the blocks are taken to a mill (worked by steam power, exactly like those used for crushing tanners' bark), by means of which the clay is reduced to a rough powder: it is then brought to the "pug-mill," containing a number of knives or flat pieces of iron, set at angles so as to form an imperfect screw. The powdered clay, with a sufficient quantity of water, is passed through this mill, and is delivered at the bottom in fine plastic form, fit for use by the potters. For small ware, the Devonshire clay needs no admixture.

The second description is a mixture of various clays with sand, the quantity of sand varying according to the size of the vessels intended to be made.

The third, or chemical ware clay, requires the greatest care, for the least fragment of grit will often render a large vessel useless. The clays used for this purpose are mixed to the extent of nearly one-fourth of the whole bulk with strong fire clays, such as those in use at Stourbridge and Newcastle, together with burnt earthenware of the most vitreous description. This mixture is carefully sifted through fine sieves; and, when the whole has been properly ground, it is raised to the different floors by machinery for the use of the potters.

The potter's wheel, a kind of lathe, having its mandril in a vertical position, is so well known, that it does not require any particular description. We must, however, notice the improvements which have been made in working it in this district during the last thirty or forty years.

Within recollection, the Lambeth potteries were mostly of small extent; horses, and even hand power, were in use for crushing the clay; and the potters all used wheels which they turned with the foot, as in the machine of the street scissor-grinders: these were called "*kickers*." In the Staffordshire and some other potteries, the "kicker" had been long superseded by wheels and bands, turned by boys, which enabled the workmen to produce better work and with greater rapidity. When Mr. Green determined to introduce the new wheel into his manufactory, the whole of the work-people struck; the master endeavoured to explain the advantages of the new plan both to them and himself, and said that although he would not discharge any man who was willing to work for him, it would be a benefit to him if they left, as it would enable him to carry out the improvements he proposed. The men, of their own will, all left except one, who was kept at work at his "kicker" until his death, a period of fifteen years, he earning 30s. a-week, while the man with the improved lathe, who sat next to him, earned 3*l.*; and so much greater was the rapidity of the potter at the new machine than the man at the "kicker," that he could produce as many stoneware ink-bottles for 6d. at the advanced wages as the other could throw off by his machine for 1s. 3d. Since the days of the "kicker," the number of men and boys employed at this establishment alone has been increased fivefold. What is thought evil turns out good:—

> "In the unreasoning progress of the world
> A wiser spirit is at work for us,
> A better eye than ours."

Out of the throes and spasms of individuals come increased comforts for the many, and general progress.

In its turn the Staffordshire wheel has given place to steam. In Messrs. Doulton's establishment steam is made to turn the disk of each potter, the speed being varied (the great point to be achieved) by means of a conical drum, over which the band passes: according to the position given to the band on the drum by the potter, so, of course, is the speed.

The rapidity and certainty with which the potter works make the operation appear an easy one: under his thumb the vessel expands, the neck contracts, the lip is rounded without an apparent effort—but, in truth, as we need hardly say, it requires long practice to acquire this skill. A good potter can make upwards of 1,000 pint-and-a-half ink-bottles in a day, and other things in proportion. A small boy at Doulton's makes 1,250 jam-pots in that time.*

Looking at the potter at work, one is struck with the force of the simile in Jeremiah,—

> "Behold, as the clay is in the potter's hand, so are ye in mine hand, O house of Israel."—xviii. 6.

The allusions to the productions of the potter's wheel throughout the Holy writings are numerous. As in Isaiah,—

> "But now, O Lord, thou art our father; we are the clay, and thou our potter, and we are all the work of thy hand."—lxiv. 8.

Or in the New Testament,—

> "Hath not the potter power over the clay, of the same lump to make one vessel unto honour, and another unto dishonour?"—Romans ix. 21.

After the turning of such objects as are round, and the casting in moulds of others of different shape, the ware is allowed partially to dry, when it is again placed in the lathe and smoothed by shaving, and ornamented by means of various instruments: it is then left in the drying-room, until, as was the case with the blocks, all the moisture has evaporated, and the vessels have become "white dry." Great care is needed in this particular, for a single damp vessel is liable to produce mischief in the kiln, by cracking and so, probably, damaging others. In the large chamber called the kiln, the dried goods are then packed in earthenware cases, called "saggers," one above the other, until the whole interior is filled. The entrance by which the men have been enabled to pack the kiln is afterwards built up, and closely plastered: six

* It was pleasing to hear that the boys here have formed themselves into a band for the practice of music, and, assisted by their employers, have purchased instruments worth 80*l.*

or seven fire-places in the sides are slowly lighted, and the heat is gradually increased until the whole of the interior of the kiln has been brought to a white heat, by which time the pottery has become a hard substance, but is without glaze. Salt thrown into the furnace produces what is called the salt-glazed ware. The brown ware and most of the common articles are made in this way.

Another method of glazing, however, has been introduced lately into some of the Lambeth Potteries. This is by a preparation chiefly composed of feldt-spar, ground and reduced to such a consistency that it can be painted over the surface of the articles; and this the white heat of the furnace turns into a vitreous glaze without the use of salt. The ware glazed in this way has a very clean and light appearance. The baking being finished, the kiln is allowed very gradually to cool, and then the entrance is again opened, and the various objects taken out ready for the market. In the whole three or four days are occupied. So great is the heat required for this purpose, that it becomes necessary to renew kilns every two or three years. It is from the numerous chimneys of the kilns that the black volumes of smoke proceed which roll over Lambeth Palace and other quarters.

It will be remembered that, at the passing of the Smoke Act, the potters made so strong an opposition, declaring that they could not possibly carry on their business without smoke, that they were partially relieved from the operation of the Act. We are glad, however, to learn that they have changed their opinion, and are striving to comply with the regulations. At Messrs. Doulton's we saw three kilns which, by a very simple arrangement, produce little if any smoke. If gas could be employed for heating the kilns, as was once suggested, it would seem that many advantages would result, the avoidance of smoke amongst them.

It is curious to notice the variety of stone-ware which is produced at these Lambeth Potteries;—ink-bottles of various sizes, large bottles for spirits, ornamented glazed casks (if we may so call them) for the publicans, various kinds of mugs, &c. for shipboard, immense quantities of strong articles for exportation to Australia; chemical vessels, retorts, glazed pans, and the worms of stills for making acids; filters, and the various goods required for sanitary uses. The large glazed ware jars of 400 gallons bring to mind the story of "Ali Baba and the Forty Thieves," and we should not be surprised to hear a voice exclaim, "Is it time?" Large jars are in use in various parts of the East, but these are unglazed, and, consequently, much more easy of manufacture.

The process of grinding the neck and lids of jars, and fixing them by simple means, so as to render them air-tight, is noteworthy. Thousands of such jars are sent abroad, filled with jams and jellies. There are many other matters which might be looked to; but having seen this much, we shake the dust from our clothes and depart, suggesting, as we do so, that a little more art might advantageously be brought to bear on this manufacture, so admirable in a commercial, social, and scientific point of regard. The arrangements for saving labour, lessening cost, and multiplying productions, are perfect, and most advantageous for society: it is to be regretted, however, when these prove adverse to the development of taste,—the production of beauty.

Of Lambeth, in a sanitary point of view, we must find an opportunity to speak further before long.

SOCIETY OF BRITISH ARTISTS.—The thirty-fourth Exhibition of the Society of British Artists is now open in Suffolk-street. It consists of 852 works of art, and is similar in character to those which have preceded it. We will give some account of it in another number.

REVIEW OF THE DESIGNS FOR THE MEMORIAL CHURCH AT CONSTANTINOPLE.

IN the first portion of our notice,* we were led by the bent of our ideas as to novelty and the use of continental models, away from the designs "especially mentioned," of which we have remarked only on those of Messrs. Weightman, Hadfield, and Goldie, and Mr. C. Gray. Mr. W. White's design is certainly one that would not be passed by so long as we have left it. It is glowing in party-colour throughout, unstinted in the drawings, and profuse in contrivance of plan and in novelty of device. The plan, described generally, comprises nave, and aisles, and transepts, with central tower, chancel; north and south corridors, forming with a western porch, a covered way round the main portion of the building; and a tower at the north-west, joined by a covered way. The length of the nave is chiefly made up of three wide divisions of piers and arches; but each bay has three subordinate divisions marked in the groining of the nave and by the bearing shafts and ceiling ribs of the aisles; and in these divisions, very narrow windows are set, four together. The buttresses are carried up to form what we must call pinnacles, though they are square in plan, and are terminated by party-coloured tile spire coverings, with finials of metal work; and there are very bold flying buttresses across the aisles and corridors. There is a general blankness of character about the decorative treatment externally, excepting as to the effect produced by the features mentioned, and the several gables to the entrances of the western porch; but positive colour is prominent on the gables, and in vandyke patterns in the roof covering; and in the interior it prevails largely. The central tower is octagonal above the roof, and is finished with a tiled capping; and internally the lofty ceiling of the lantern is vaulted. The other tower is lofty, and barely decorated in the lower part, and is finished with gabled sides and an octagonal tiled spire capping. It may be doubted whether the design would not be too gaudy in effect, and whether the result would be at all proportionate to the real study involved, or even the *cleverness* which the work exhibits.

From the *manner* in which novelty in details is studied, it may result that *art* is reduced in effect; and the very ingredients which should go to form the art may be the means of destroying it.

Mr. R. P. Pullan, on the other hand, also "especially mentioned" (for his design with the motto, "In Remembrance of Scutari"), though he exhibits a design for elaborate enrichment of the end of the chancel, appears to have studied plainness of character, or at least in his exterior. He also adopts the cruciform plan, but with a western tower and spire, and lofty aisles without buttresses. He shows no clerestory, but has a triforium, lighted by a second range of windows. The ceilings of nave and aisles are vaulted; and as in most of the designs, the roofs are of timber, and of a high pitch. A wooden *flèche*, with lead covered crocketted spirelet, is placed at the intersection of the cross. The same architect exhibits a second design, but of less merit.

Mr. G. Truefitt—in the same class—shows no decoration in colour, and little otherwise in ornament; but, whilst his plan is novel, the combination in the design is effective. The plan in general arrangement is cruciform; but the nave and transepts are narrow, without aisles, and branch out from a central irregular octagon (a square with angles cut off); the transepts are terminated by towers rising clear of the centre, surmounted with gables, pinnacles, and spires; and the chancel is terminated by an octagonal apse, whilst a vestry and organ-chamber to the chancel form with it one general octagon on the ground, though they are carried up to somewhat less height. The centre octagon is carried to a greater height than the nave and chancel, and has its separate roof, with a *flèche* or spirelet. There are no buttresses, except as piers internally; mouldings are sparingly used—there being none to the gables: the parapets have only a crowning moulding; and the chief decoration is got by the windows—with plain perforations to their heads; and by a number of star-shaped perforations along the battlements and other parts. The general group, however, is happily composed. The windows are in the upper part of the walls; the ceiling is plain waggon-headed—arches over the windows groining in; and the centre space being domed over. A good rood-screen in iron-work is shown.

Of the four designs which are "honourably mentioned," Mr. A. Bell's is of northern Gothic character, cruciform on the plan,—having nave and aisles, and lofty chancel, with apse dodecagonal in plan,—and two square towers in the position of transepts, with pinnacles, gabled sides, and low pyramidal spire-cappings of stone; and it has also a vestry and an organ-chamber with apses, in the position of chapels to the transepts. The north transept or floor level of the tower forms a baptistery, and the corresponding part of the plan forms the depository for the bier, and would be approached at funerals by a covered way, which is external to the south aisle. The arches of the towers next the nave, are filled in, each with subordinate openings and a central column. The style is a modified Early English, with continental features. There are bold buttresses and flying buttresses, and high-pitched roofs; a waggon-headed vault to the nave, and a groined ceiling to the chancel. Coloured materials are sparingly introduced. The nave piers are shown as of red marble or granite, and there is a smaller shaft attached, for the support of the principal arches to the aisles.

The design by Francke, of Meiningen, is the only one of those by a foreign hand that would lay much claim to notice. The plan has been carefully studied; but the decorative details, though they may be moulded after some examples of German Gothic, are so spiritless, and positively so un-Gothic to English eyes, that we are afraid we may not give that place to the design which others have deemed it deserving of. Its best feature is exhibited on plan in the treatment of the east end, no doubt intended as the place for monuments. As in cases before referred to, this has a polygonal apse, formed by piers and arches, with the aisle carried round—the inner form being irregular octagonal, and the outer one from a polygon of sixteen sides,—the groining here, as it is throughout the design, being very carefully considered. The general plan is cruciform, with short transepts—the divisions of nave and aisles of equal height internally; and there are two western towers with perforated spires, and a central spirelet. The aisle windows are lofty, with unbroken mullions, and traceried heads. The disconnected horizontal stages of the towers; and the pinnacles springing from labels or canopies, or inserted in the raking lines of gables, are surely things such as should be avoided.

Messrs. Howell and Budd's design has been studied with extraordinary pains, and is shown in a very elaborate set of drawings. Everything appears to be drawn,—to the hanging of the bells, and the colours and patterns of decoration. The plan—an extensive one—consists of nave and aisles, transe pts, chancel with apse on the dodecagonal plan and ambulatory, aisles of communication (alongside the chancel) and vestries without, a south porch having a room over it, a west tower and spire, and a baptistery and a morning chapel to the west. Also, there are a triforium and a clerestory. The general design is of Early English character. Coloured materials are used in patterns with considerable skill. The nave piers are rectangular on the plan, and carry segmental arches, but with a second arch under the soffit, of equilateral shape: whilst the chancel arches are of the more general form. The nave is covered by a waggon-headed vault, with arches over the clerestory windows, groining in: whilst the chancel ceiling is groined throughout. There is a wooden louvre, opening to the interior, at the intersection of the cross. The perspective effect of the interior would be fine; and details of decoration, both pictorial and ornamental, exhibit taste,—but could such a building be raised for 20,000*l.*?

Messrs. Prichard and Seddon exhibit in their design, a very clever application of coloured materials disposed in voussoirs of arches and

* See p. 157, *ante*.

circles and sub-arches surrounding the light-coloured stone tracery which fills in the window openings. The *plan* also has a distinctive character. It comprises nave and aisles, chancel with dodecagonal apse, transepts extending to the aisles, a western tower, and in advance of the latter a porch running up to the height of two stages, with open arches in the lower part, and exposing internally the full height without floor. This communicates with the middle of an open loggia at the end of the main building,—proposed for the sculpture,—through which access is gained to the congregational portion of the church. The style may be called Early Decorated in character, with a few Italian features. The aisles are low, with shallow buttresses, but without windows, and are faced internally with coloured materials in patterns, and have stone roofs. The clerestory is of great height, with gables and bold flying buttresses, the ceiling of the main division being stone groined, under a high-pitched roof. The tower is square below, and octagonal at the belfry stage, and is crowned by a lofty spire; and at the intersection of the cross is a *flèche*, or spirelet. The merit of the design is in the treatment of the coloured materials,—each being applied in its proper place, and without the too common excess.

Amongst the other designs, is one by Mr. T. Meyer, which has a cruciform plan without aisles, and a central octagon with large lantern, pinnacles, and flying buttresses, but is more elaborate than successful in its details.——Mr. C. H. Gabriel, whose design is of Early Decorated character, and cruciform plan, exhibits two well-drawn views of it.——Mr. Railton's design is cruciform in plan, with western and central towers and spires, and flying buttresses, and is of general Early English character, with the masses well proportioned for effect, though the details have less novelty than those of other designs. The piers supporting the central tower seem of slight proportions,—being no larger than the others.

Mr. T. E. Thrupp, who has a good perspective view of his design (Early English, with two western towers), shows a contrivance which it may be supposed is introduced to resist the effects of earthquakes. He would turn the main arches as semicircles, from pier to next pier but one, placing the intermediate pier with its halves of the pointed arches (in which the voussoirs are shown dowelled together), under the other. An iron rod would be then fixed upright in the intermediate pier, and bolted top and bottom to a continuous chain,—one chain above and another below the arcade.——Mr. Raffles Brown's plan is cruciform, with nearly equal nave and aisles, and the apsidal termination to the chancel which in some form has been adopted by so many of the competitors. Otherwise the design is of English Gothic character, except as to the introduction of red bands. It has a tower and spire of excessive height.

Mr. J. W. Mould is an exhibitor from New York. The transept in his design is of greater height than the nave, and has the tower at one end of it. The general grouping has more merit than have the details. Like many of the American attempts in Gothic,—shall we say, affording that reflex of character which architecture ever presents,—this design is pretentious in its claims, but wholly fails when tested by examination,—the horizontal lines in the tower and spire are sufficient to quote as instances.—— Mr. Henszlemann's Gothic, of a different sort, is equally curious in its way; and yet, some of the details of the polychromatic decoration show knowledge of that portion of the subject.——Mr. James Castle's design has merit in many of the parts,—spite of their costliness. But, the coloured materials are applied in a questionable way, considering both colour and cost of carving.——Mr. M. Rohde Hawkins's design is one of a higher class than some that we have been noticing,—yet the resemblance which there is between the central and the western *towers*, and the difference in scale and treatment otherwise, involves, we think, some error of principle. They should either be of one family—with spires, or designedly more different as to the towers.——Messrs. F. and H. Francis's design is also of English Gothic character, and is shown in a good perspective view. The framing to the roofs and spire appears to be of wrought-iron, and covered with lead,—in the case of the spire ornamented with pateras in alternate spaces. We suppose the climate was considered with reference to this metal-work. In some parts of the East, we apprehend, such a mode of construction would be wholly unsuitable. The stone roof is, as we observed in a former article, the proper covering.——Mr. L. de Ville's design has a peculiar character of loftiness of proportion, but fails in details; whilst Mr. Derick's design is one of those which are correct and careful,—good according to the standard of English models,—but which contain little that is new, or of the real nature of the indispensable *art*.

But, on the whole, we retain the opinion that the exhibition illustrates a decided step of progress: and it deserves even more attention than we have been able to give to it.

MR. SYDNEY SMIRKE'S SECOND LECTURE ON ARCHITECTURE AT THE ROYAL ACADEMY.*

IT is amusing to trace the various changes and chances of our helpless art, struggling amidst the difficulties that beset her during the four or five centuries succeeding the date of the Tomb of Theodoric. To borrow a not inexpressive homely figure of speech, the builders of these times were as breeders who wholly neglected purity of blood, and every species of cross was the consequence. In Lombardy the old Roman stock got tinged by the strange fantasies of the northern mind; and in Venice may be recognised strong indications of an eastern infusion. In Puglia and Sicily the graceful hand of the Saracen plainly discovers itself; and in parts of France, also, these eastern influences have left behind them the traces of a genial taste. Strange and often inharmonious combinations led necessarily to the confusion of style; for there were no master minds to combine or correct, and the genius of originality had departed. At this period, art shared the fate of literature. Hallam, in his history of this period, says;—"Ignorance was the smallest defect of the writers of these dark ages: they are uniformly deficient in original argument and expression: almost every one was a compiler of scraps from the Fathers." How truly may this criticism be applied to their buildings! Unable themselves to carve, they misunderstood and misapplied the sculpture of their predecessors. Reckless spoilers, they carried off the columns that others, in happier times, had wrought; and piled them up again often with misapplied capitals and inappropriate bases. I have myself seen, in the crypt of one of the earliest Christian churches in Sicily, an Ionic capital, of classic workmanship, reversed and converted into one of the priest's sedilia, the volutes forming the elbows.

The strange expectation that pervaded Europe in the tenth century, that at its close the world was to pass away, seems typical of the prostrate state of society at this period. But the night has its morning, and with the eleventh century came clear evidences that the crisis was past. Political improvement soon begot improvement in the arts. The vigorous republics of Italy led the way to the cultivation of the neglected arts of peace, and the dormant fallows soon began to show signs of the riches they concealed. In Pisa, and Lombardy, and Venice, buildings arose which, to this day, court and deserve our admiration. The period of the highest political prosperity of Lombardy was marked by the execution of great engineering and architectural works, which remain to this day as honourable monuments of the freedom and energy of the Lombardic States. On the Rhine, and in France, our teeming art brought forth a numerous and noble progeny of buildings. On our own soil, too, sprang up edifices which command our veneration, not only for their age, nor only because they are the works of our own forefathers, but because they are, in some respects, and in some instances, unrivalled, in dignified and simple grandeur, by the works of any succeeding time. Disregarding the attraction of mere ornament—devoid of all architectural artifice,—the old builders of our Norman period knew well how to raise structures in harmony with their own earnest and devout feelings.

It may be an agreeable task, hereafter, for me—or some other who may follow me—to study with you the details of these truly noble monuments; to trace the Classic parentage of many of the most characteristic details of Norman architecture; to point out the direct lineal descent of not only many ornamental, but many constructive devices, from the age of the emperors to that of the pontiffs; for example, how the solid ashlared ribs, with light rubble spandrils, as practised by Norman masons, were derived from a like economy of labour and material observable in the groined vaults of the Coliseum. But, for the present, I forbear to dwell on such matters. Nor shall I attempt to expound to you how, when, and where builders first turned pointed arches. Of this we have already had theories enough.

Our old master, Wren, tells us that the Crusaders brought the pointed arch from the East, and I, for one, am quite willing to believe that, if they did not, they had at least seen such arches in use before they had been engrafted on western architecture. It may, I suppose, be safely asserted that, since the dispersion of Babel, no movement of popular masses has been attended with more important or more permanent results than the Crusades, and it seems no unreasonable conjecture that the pointed arch was one of these results. But a larger and more interesting question remains behind. In what region and at what period were buildings in the Pointed style (of which the arch is only a component member) first erected? England once laid claim to the parentage of it,—Germany still appropriates it,—Italy has had its advocates. I believe that the weight of evidence preponderates in favour of France; and the period of its earliest appearance is to be referred to the first half of the twelfth century.

Such was the extraordinary vigour of our art, now thoroughly awakened from its long slumbers, that, in the short period of half a century, the style arose, and reached, if not its maturity, at least to a perfect, complete, and consistent existence. Some idea may be obtained of the fervid activity of this period, from a consideration of what architecture effected in Europe during half of the twelfth century, as compared with the progress (if progress it may be called), during half of the eighteenth century. In the one case it would be easy to adduce a long series of splendid edifices, evincing a constant advance in the knowledge and power of art. In the *latter* case, how faint and feeble the steps! The puerilities of Louis XVI. varied but little from those of the preceding Louises. In England, from the first George to the third, what advance was made but from one deformity to another?

During the first period under consideration, not only did religious bodies vie with each other in the erection of numerous stately structures, on a more extended plan, and upon a more sumptuous scale than before, but their artists devised new modes of construction,—brought out new effects—created new beauties—and overcame new difficulties. Disdaining to follow their predecessors even in the mere outline of their mouldings, they flung aside their old moulds; excavating deep hollows, and bringing out sharp arisses, with a vigour and force of hand quite unknown to their fathers. But it must, in candour, be admitted that to France is mainly due this wonderful development. England followed with a more faultering step, and parted slowly with the forms of her Norman conquerors. It was in France that a moral energy, religious zeal, and political preponderance, combined to favour the exertions and genius of its accomplished architects.

I may remark, however, that our comparatively slower pace was attended by one advantage: it gave us time to perfect an Early Pointed style (which, with a degree of pride not altogether unwarranted by fact, we are fain to call the Early English style), more homogeneous and complete than any corresponding transition style in France. So rapid and brilliant was the advance there, that the interval was short that intervened between the first establishment of the Pointed style and its full maturity. As to Germany, the grand, old, sombre style of Romanesque architecture lingered on the banks of the Rhine long after the more mercurial genius of the neighbouring country had advanced far in the new manner of building; whilst in Italy this novelty, being an imported article, was marked by scarcely any preliminary efforts.

The upper church at Assisi affords, perhaps, as complete a specimen of Early Pointed art as any in Italy, and yet it was nearly the first, bearing date in the earlier part of the thirteenth century. For a time, it is true, this style became prevalent in Italy, but its reign was short. From the date of Arnolpho di Lapo's work at Assisi to Andrea Orcagna's Loggia at Florence, there was an interval of about 100 years; and at this Loggia we see strong indications of a return to the classic school, which Italy had quitted so late and so reluctantly.

Reverting, however, to the more general European view we are taking, I would say that, with certain exceptions, Pointed architecture perfected itself throughout Europe at the close of the thirteenth century, and obtained that preponderance which was due to its own superiority in all the highest qualities of our art.

An insatiate spirit led on the enthusiasts of the fourteenth century to seek out fresh triumphs, but this very ambition was the stepping-stone to their subsequent degradation. The first signs of this are perceivable in an exuberance of ornament, and a certain

* See page 148, *ante*.

artificial character of construction, which afterwards became the seeds and sources of ultimate decay. Every gable and pinnacle, and almost every cornice, became fringed or studded with crockets, buds, or bosses. Workmen began to fret over and cut up every plain surface, and to seek out means or excuses for perforating every solid space. That last remnant of Early art,—the capital,—representing the impost of classic times, ceased at length to be an essential feature of an arcade; and all lines became blended into each other; the straight into the curved; the convex into the concave; until masons seem to have repudiated their natural material, and treated stone like wood or iron. Many superior buildings, no doubt, arose during this period. The accumulating wealth, and, I must add, the aspiring tendencies of the ecclesiastical and municipal bodies, urged the builders of the fourteenth and fifteenth centuries to make great efforts, and many noble buildings were the result. St. Stephen's, at Vienna, Fribourg, Antwerp, Milan, and many other fine structures, attest the unabated ardour for church building, and the increasing constructive powers of masonry: yet still the course of true art was then a downward course. In short, a great change had come over the Gothic manner, we have already seen how it fared with Greek and Roman art,—and so it fared also with Mediæval art. What began in simplicity, ended in complexity and confusion: what was pure at first, became prurient at last. Indeed, excessive ornament, however admirable or striking the effect of it in particular instances, may be taken as the surest indication we can have of approaching decay.

It is needless, however, to dwell on a tale which has been often told. The errors of the later Mediæval architects have often been the subject of unfavourable comment, and are too often unjustly used as instruments of attack on the style itself. We are accustomed, with justice, to accuse the exuberance and excess of the later styles as the causes or the consequences of degeneracy; yet such a result seems to be in the natural and inevitable order of events. Builders were at first timid and cautious, like men exploring a new country: they were satisfied with small advances, and sought rather to secure their footing than to expatiate freely. In course of time they gained courage through experience, the masons struck their stone with a bolder and a freer hand, and at length, having acquired a complete mastery over their materials, and confidence in themselves; they would seek by *tours de force* to produce new effects and more surprising displays, and each became emulous to exceed his fellows in the exhibition of manual dexterity. Thus our art would necessarily be distinguished by simplicity and plainness in its infancy, by intricacy and ornament in its decrepitude; the latter arising from excess of power, the former originating in actual incapacity.

As we pass on in our history, we find our chronological view somewhat embarrassing. It might almost be said that civilized Europe had hitherto been cultivating one school: architecture spoke, as it were, but one language, varied only by dialectic peculiarities; a general coincidence which is very remarkable, considering the social disunion of countries at this period, and of which, if the subject were worth pursuing, many curious instances might be adduced. We can scarcely account for this coincidence, except as perhaps one of the effects of the widely extended and closely bonded fraternity of Freemasonry. But in the course of time this unity of feeling and practice became weakened or dissolved, and the artists of various countries diverged into various paths. Distinct schools were formed, and styles became localised. France, Germany, and England assumed widely different aspects, and it is curious to note to what extent this separation was ultimately carried. The several provinces of France differed materially from each other: mutual differences are also apparent in the several schools of German art. Even in a country so geographically small as England, striking characteristics distinguish the north from the south; the east from the west.

Such differences were no doubt partly due to the differences of available materials, a circumstance often greatly influencing the local character of buildings; and of this I may hereafter have occasion to present to you some notable instances. But these differences were, in this country, also due to its growing independence of foreign connection and of foreign art. England had formed her own schools, and thence became possessed of her own special diversities of style.

I shall not, however, contend for our superiority at this period. I am ready to confess, that whilst on the continent a licentious freedom prevailed in late Mediæval architecture, characterised by great force and boldness; England, on the contrary, sank far beneath her former level, and betrayed undeniable signs of imbecility. Whether, and to what extent, this decay may be attributed to social and political causes we will not stop to inquire. It is, however, certain, from whatever cause arising, that not only in England but throughout Europe, Pointed architecture lapsed into such a condition as to render its final abandonment a subject of little regret.

The style had in truth worn itself out. The strangest vagaries prevailed. Stonework was distorted into apparently impossible forms, assuming the proportions of metal; twisted into a resemblance of wood; and, as at Ulm and elsewhere, tracery was made to imitate the branches and small twigs of trees. All merit was considered to consist in extreme dexterity of execution; and simplicity seemed to be the principal defect to be avoided.

But the abandonment of mediæval art was very far from being contemporaneous throughout Europe, as I will proceed in a few words to show. I have already named Orcagna's celebrated Loggia, whose date is the middle of the fourteenth century. This work is of no great dimensions, but of most pleasing proportions, and, except its cornice and a few minor details, seems conceived in a perfectly classical spirit, and was, in fact, among the first fruits of the growing distaste for the then prevalent Pointed style. The passion for classical literature in the free states of Italy soon completed the discomfiture of mediæval art. Fortunately for Italy, a most beautiful modification of the classic style arose in the fifteenth century; and as the change happened to coincide with the appearance of a glorious company of the most accomplished artists, a beauty was imparted to the resuscitated features of ancient art which was truly admirable. I would name the church of Sta. Maria dei Miracoli, at Venice, and the church of S. Francesco at Rimini, with some other well known buildings, as singularly elegant and well worthy of careful study, not only for their exquisite details, but for the pure and simple dignity apparent in their design.

The examples, however, of the best renaissance work are not numerous in Italy. The extreme activity of art at this period led to the natural result—excess, as at the Certosa, at Pavia; and the inordinate study of classical remains led to the abandonment of much of that which was original in the manner. A school, however, arose, of which the masters were such men as Alberti, Peruzzi, Raffaelle, and Michelangelo, wherein was perfected such an admirable adaptation of ancient forms to modern uses, that now, after the lapse of 300 years, human ingenuity has since contrived no style (as it appears to me) so exactly meeting the wants of civic architecture: plastic and versatile; capable of adaptation to every purpose; susceptible of every expression—

"From grave to gay, from lively to severe."

So active, however, was the movement of our art, and so rapid her course at this period, that the same great master who witnessed the earlier steps of the Renaissance, witnessed also its decline. Michelangelo, whose stupendous power gave force and breadth and grandeur to every thing he touched, but whose mind was rather sculpturesque than architectural, did, I fear it must be admitted, lead the way to those anomalies which in weaker hands became serious defects.

It affords a curious evidence of the æsthetic isolation of England at this time, that during the greater part of the period to which we have just been adverting, scarcely a glimpse had been yet caught of the great changes which continental art was then undergoing. England appears to have been taught her first lesson in the new style by Holbein; but is it not remarkable that at the very time when this German artist was startling the semi-Gothic court of Henry by his novel and fantastic arabesques on the ceiling of the chapel in St. James's Palace, Michelangelo was painting the noblest imagery which the human hand had yet depicted on the ceiling and walls of the Sistine Chapel in Rome.

With us the new Italian mode of architectural design made no very rapid progress. For full 100 years our buildings, generally, retained a strong savour of Mediæval art. Unfortunately, too, the active mercantile intercourse existing at this time between England and the German states, and our ties of consanguinity and of political interest with the German races, gave to our Renaissance rather a German than a French or Italian bias. We are not wanting in specimens of this transitional style, equal perhaps in beauty and grace to any,—but the examples are neither numerous nor considerable. Certainly, the general character of our English buildings at this period deserves much of the condemnation which has been bestowed on it with no sparing hand; for, however widely asunder the partisans of the two extremes of Classical and Mediæval art may be, both extremes concur pretty cordially in contemning that mixed breed of architectural forms which prevailed during the reigns of Elizabeth and James. This hybrid style has, indeed, its merits as well as its admirers: there is a broad, masculine boldness in its eccentricities; much ingenuity and originality in its conceptions; and, above all, its peculiar claim to the quality of the picturesque is undeniable. It, further, enlists our national sympathies as Englishmen, and marks a brilliant epoch in our history. It is, moreover, an indigenous variety; for although, as I have already said, it bears a strong analogy to the contemporary manner of the Germans, it has a sufficient individuality to distinguish it very plainly from the heavier and more grotesque German variety.

We must not, however, dwell too long on this period: our ever-changing and inconstant art, like a dissolving view, no sooner reaches a period when a style stands out clear and distinct, than again it confuses itself, and, entering into new combinations, emerges anew with an altered aspect.

Recurring again now to Italy, as unquestionably taking the lead, at this period, among the artistic powers of Europe, we find art making a rapid descent after the days of the elegant Palladio and his polished contemporaries, and a style of architectural design became prevalent, the inferiority of which is, like that of Elizabeth, only redeemed by its breadth and boldness.

I am much inclined to attribute some of the leading errors of architecture at this period to the habit, then very generally prevalent, of uniting the practice of our art with that of one, or both, of the sister arts. Those sisters are guided by principles, in many respects so different from ours, that the architect must be indeed rarely endowed who is capable of successfully practising (however carefully he may, and should, cultivate) those other arts. The painter and the sculptor may well share with the architect in the study of the purely æsthetic principles of design; but there are other studies, I need scarcely say, immediately connected with the art of building, which are at least of equal importance to us. That whatever we design shall be consistent with the principles of sound construction is an obviously essential consideration, and, in designing, should ever be present in our minds. Yet these principles are precisely those which are necessarily foreign to the sculptor's and the painter's course of study and habit of thought.

From this combination of pursuits has probably arisen much of the extravagance of the Boromini school: such practical absurdities as broken pediments, and twisted columns, and that strange intermixture of floating clouds and flying drapery with the rigid and substantial forms of architecture, which defies common sense, though it certainly, sometimes, brings out some fine scenic effects. Hence, too, those strange curvilinear plans, such as the Royal Library at Berlin, and many continental churches, built in the palmy days of the Jesuit missions, which were quite unknown in the better periods of art.

It is to be lamented that the great religious movement which originated with Ignatius Loyola, chanced to occur at this period, when our art was in so debased a state. An extreme zeal in the erection of churches and colleges distinguished that society, and to this day we witness the result, throughout the Continent, in a great variety of buildings, often very picturesque, profuse in decoration, and sometimes ingenious in construction, but in a style that has nothing whatever to recommend it to your favourable consideration.

Whilst art, in Italy and Germany, having lost its true path, was thus wasting itself in vain efforts to produce great effects, by false and artificial means, French art was diverging into another path, with results if not more natural, at all events, far less open to condemnation.

The grandeur of the architectural works towards the close of the seventeenth century in France, is so nearly allied to real greatness, and has so much of actual beauty of detail to recommend it, that we cannot be surprised at the estimation in which it is still held by many.

But, as we have already seen, our art never pursues a level course; and the breadth of design which distinguishes the age of Louis XIV. became frittered away and disfigured by affectation under his successors, when at length the storm of the great revolution arose, and our art, in common with the political institutions of Europe, had to submit to other great changes.

To revert to the period of the Renaissance in our own country, I have already said that the free, though grotesque manliness of the Elizabethan period soon lost its character. The public mind of England was engrossed by her internal contentions, and influenced by the more frequent and direct communication with the Continent, we were content to borrow the peaceful arts of design from our neighbours, on whom we have been so often dependant in matters of social habit and taste. Close observers of costume will trace, in pictures of this date, the prevalent fashions of France, Germany, Spain, and Italy, contemporaneously influencing the dress of the people of England.

It was to the building up of a great political fabric that the energies of England were exclusively directed, and she postponed all minor considerations to a more peaceful time and a more convenient season. It is

recorded of Themistocles that whilst he would frankly admit his inability to play on any instrument, he yet claimed the prouder distinction of knowing how to render a great nation prosperous and happy. So Englishmen, at the end of the seventeenth century, may well afford to admit that they followed the taste and fashions of other countries, whilst, in their own, they were engaged in laying deeply and broadly the foundations of a political system which other countries have ineffectually attempted to borrow or imitate.

Let me not, however, do injustice to the memory of our great master, Wren, who certainly holds such rank among the artists of Europe as may go far to redeem the character of our country at this period.

I think there is little doubt that, had he lived under more favourable influences, in better times, and with the means of acquiring a more intimate knowledge of art at its best periods, the mental powers and professional skill of Wren would have placed him on a level with the highest of his predecessors, as they certainly did win for him an unapproached preeminence among his contemporaries. In tracing these outlines of the history of our art, you will perceive that I have exclusively followed her fortunes as a *fine* art. Were it possible within these walls, and on such an occasion as this, to trace the mechanical and constructive progress of architecture, our course would not be without interest and utility: we should find that sound principles of construction have always distinguished the best periods of art. The Greeks, like the Egyptians, worked, not perhaps with much constructive finesse, but with a most elaborate, reverential attention to good execution. The bedding and jointing of their masonry surpasses even the comprehension of a modern mason. Roman buildings, also, of the Augustan age, show the highest degree of constructive excellence; and, except in the use of iron, I am at a loss to say what material progress has been made in this department of practical art, during the seventeenth or eighteenth centuries that have since passed away.

The darker ages that followed were as strongly marked by constructive incapacity as by the fallen condition of architecture as a fine art. Great negligence of execution, and a resort to rude, unscientific, expedients mark that age, and it was a sagacious policy of the church to re-animate the subsidiary arts of building, by ennobling and investing them with the character of a religious confraternity of which the vestiges still survive to us in the social institution of Freemasonry.

In the best period of the middle ages, the study of the arts of construction were not held to be beneath the dignity of the highest intellects, and the result was a wonderful mastery over the practical arts of building.

These few remarks I throw out as suggesting to you a useful line of study; not one, however, that can be pursued within these walls.

I now bring my brief historical notes to a close; it is useless, perhaps, to pursue them farther. To speak of the present would be an invidious task: to speak of the future would be an idle presumption. To undergo a perpetual change seems to be the destiny of our art. Between the works of the Creator and of the created, there is no greater distinction than their relative mutability. Of the latter, all is fluctuation, change, and decay; — of the former, as it is to-day, so it has been since the beginning. There are no fashions in the plumage of birds; and the flowers, whose grace delights us now, have, with the same grace, delighted mankind since they first scattered their fragrance over the garden of our earliest parents.

Let each man, therefore, in his sphere, strive to restrain these fluctuations of fashion within the limits of good sense. It is, at least, the artist's duty to do so. But we cannot alter our inherent infirmities, and all that the most ambitious teacher can hope to do, is to offer the assistance of rudder and compass to those who are about to launch their frail vessels on the troubled waves of professional life.

IMPROVEMENTS IN THE PARKS.

THE projected improvements and alterations in the metropolitan parks are beginning to develop themselves, so that an opinion may be formed as to what their effect will be when complete. The long draining and cleansing operation in St. James's-park seems to be progressing satisfactorily. The bottom is nearly formed, and in a few weeks this part of the business may be easily terminated, and by the end of May the water be turned in. Let us hope that the little fountain at the head of the lake opposite Buckingham Palace will be really improved, and the quantity of water thrown up by it considerably increased. Let us have no more squirts, but something really effective and ornamental. Surely the powers that be can call in the aid of some artistic cunning in the mystery of hydraulics, capable of arranging a series of roses, jets, and pipes something different from the old model of the street fire-plug, which really seems to have been the original of all our attempts at fountains.

The foundations of the suspension-bridge are progressing apace. A light structure of this kind, when once well commenced, ought not to be long in hand, and might be finished in a few months. This bridge will lead direct to the new passage opened to the public between St. James's Palace and Marlborough House.

This passage is supposed to be a thoroughfare, but during the levee the other day it was closed to the public, and considerable confusion was the result, for numberless cabs were turned back to make a detour either by the Stable-yard, or, in some cases, by the Horse Guards. This is an inconvenience which, when the new bridge is opened, will amount to a nuisance, but which, from the peculiar nature of the case, seems to be difficult to obviate on the occasion of drawing-rooms and levees.

By opening the passage to Pall-mall, a considerable slip of garden-ground is added to Marlborough House, which was much required at this part, as it was too closely hemmed in by the wall forming the western boundary.

In Hyde-park extensive alterations are in progress, which may be decidedly pronounced great improvements. Rotten-row has been considerably widened, re-railed, and partially drained, so that it now forms an excellent promenade for the equestrian part of the *beau-monde*. The Ladies'-mile on the side of the Serpentine seems to have been left untouched and forgotten, except near the magazine by the bridge, where the approach to Kensington-gardens has been opened up and considerably improved.

The Ladies'-mile requires widening,—not only the carriage-drive, but the paths on each side, for on fine attractive Sundays they are overcrowded, while on the north side, now apparently the fashionable lounge in the season, there are scarcely any walks at all, except ragged and irregular paths paddled out by the people themselves. The immediate vicinity of the Humane Society's Receiving-house requires improving, as at present it forms anything but a pleasing feature in the scene.

However, the grand improvement in Hyde-park is the new walk leading from the Marble Arch to Kensington-gardens. This is a decided improvement, and will be much appreciated by the denizens of the neighbourhood. It forms a pleasant walk from town to the gardens; and when the young trees and shrubs are full grown, will screen the park side from the dust and *désagrémens* of the public road running parallel with it. Any one remembering what this walk used to be,—little better than a swampy puddle, replete with every kind of nuisance, offensive to more senses than one,—will be highly gratified at the pleasant change effected.

Near the Marble Arch a kind of artificial mound has been formed, with a sunk road, which is for the purpose of concealing a series of conveniences, much required in the parks. These will be entirely concealed from view by the little shrubbery planted on the newly-created mound. There will be a small ornamental cottage for the residence of the Janitor of the place, which will be snugly ensconced in a bowery plantation of shrubs and trees.

While on the matter of new roads and shrubberies, attention may be called to the neglected state of the path from the Bayswater-gate to Brick-hill-gate. This route connects Belgravia with the new neighbourhood of Bayswater, and is much used. The path, however, in winter, is little better than an impassable puddle, full of holes and muddy water. It requires immediate attention, and as it is really an important path through the gardens, it ought not to be left in its present neglected and forlorn condition, for in wet weather it is really impassable. The trees in the neighbourhood of this path have been rather smartly lopped, for the purpose of admitting a free circulation of air, and letting the same more readily penetrate, so as to promote the growth of an agreeable covering of grass, instead of the present black and swampy-looking surface.

The improvements in the parks are not merely a step, but a good long stride in the right direction,—a pretty clear indication that at last, by some means or other, "the right man is in the right place:" and as he has begun so let him continue till the parks are transformed into what they ought to be—pleasant and ornamental places of recreation, where our pent-up citizens may freely breathe the fresh air, and sun themselves in parks and gardens as beautiful in appearance as they are useful for healthy exercise and amusement.

In many places the old weather-beaten wooden railings have been removed, and replaced by "invisible" wire fencing, to the regret of some parties, who seem to fancy that old-fashioned posts and rails are more rustic and park-like than new wire fencing. The change, however, is for the better, as from a little distance the wires are scarcely perceptible, which gives the inclosure the appearance of being open and in a state of nature, which is certainly more effective and pleasing to the eye than a long array of wooden rails, howso ever old and rustic they may seem to the eyes of a few old ladies and gentlemen of a certain age.

In a few months, when all these alterations are effected, the young trees and shrubs in full leaf, glowing in all the beauties of the pleasant spring time, these changes and improvements will be duly appreciated: let us hope that they will be thankfully acknowledged, and due praise given where the praise is due—to the taste and exertions of the worthy Commissioner, Sir Benjamin Hall. J. L.

INSTITUTE OF BRITISH ARCHITECTS.

AT the ordinary meeting of the Institute, on Monday last, Professor Donaldson took the chair. Mr. H. Shaw, F.S.A. was admitted as an Honorary Member and Mr. Francis was admitted as a Fellow.

A letter was read from Colonel Phipps to Earl De Grey, president, conveying her Majesty's entire approval of the award of the Royal Gold Medal to Mr. Owen Jones; also a letter from Mr. Owen Jones, expressing his appreciation of the flattering manner in which the resolution of the Council had been supported by the members generally.

Mr. J. G. Crace read a paper "On Furniture; its History and Manufacture."

Mr. Crace's paper was illustrated by some interesting drawings of Egyptian, Greek, and Roman furniture, copied from existing specimens, and from vases and other representations; together with a large and beautiful series of photographs of the cabinets and other specimens of furniture exhibited at Gore House, and in the Great Exhibitions of 1851 and 1855.

The chairman said that he was sure the meeting would feel much indebted to Mr. Crace for his illustrations of the history and development of art in connection with the manufacture of furniture, which was one of the most important branches of decorative art. Mr. Crace had given some interesting illustrations of Egyptian, Greek, and Roman furniture; and in addition to his remarks, it might be noticed that carpets were entirely unknown in classical times, having been introduced from the East at a later period. The tesselated pavements, however, of the Greeks and Romans, were exceedingly interesting, from the beauty and variety of their patterns. In Mediæval times, a profusion of ornament and decoration was bestowed upon furniture, both in churches and mansions; but he would only now allude to the two thrones or chairs used at the coronation of the Sovereign, in Westminster Abbey. One of these was originally a very splendid piece of furniture, being beautifully carved, and in part covered with gilded stucco-work; but the other was only a rude imitation of it. Mr. Crace had referred to an Egyptian seat, presenting examples of inlaid work, somewhat analogous to modern marquetry; but that art appeared to have been directly derived from inlaying in marble, especially as practised in Florence. French furniture had deteriorated very much in artistic merit from the time of Louis XIV. to that of Napoleon I.; but a superior style of ornament had lately been introduced. This was strikingly manifested in the Great Exhibitions of London and Paris; and it was gratifying to know that the London manufacturers had also produced works of very great ability. As Mr. Crace had observed, if the exercise of a pure taste were not upheld in the production of matters of luxury, such as decorative furniture, England would fall behind her competitors.

Mr. Digby Wyatt referred to the ivory diptychs of the Lower Empire, as furnishing some curious illustrations of furniture, in the successive variations of the form of the Emperor's seat or throne. This, it would appear, became gradually more and more elaborate within the next two or three centuries after the time of Constantine, and at length was covered with jewels and similar decorations. The great seals of England, France, &c. afforded similar illustrations of the subject, and were especially valuable, as being in all cases the work of the best artists of the time.

Mr. Crace called the attention of the meeting to some specimens of inlaying for marquetry, which had been cut in the room in the course of the proceedings by a workman in the employment of Mr. Blake, of Rathbone-place. These consisted of the petals and other parts of flowers, in four thicknesses of differently coloured woods; and the process of their execution, with the nature of the implements employed, excited a considerable degree of interest. Mr. Crace drew particular attention to the extreme fineness of the saw (being a watch-spring almost as fine as a hair), as contributing mainly to the necessary accuracy with which marquetry was fitted together.

Mr. C. H. Smith added some comments on the nature of the process, and stated that in the hands of a skilful workman it surpassed the results of machinery, both in accuracy and beauty.

In reference to a remark by Mr. Digby Wyatt, Mr. Crace stated that in a large establishment at Paris, the patterns for marquetry (on which the accuracy of the workmanship, of course, mainly depended) had lately been executed in lithography. This was a very useful application of the printer's art; but minute accuracy, even to a hair's breadth, was essential in small designs, and however correctly a design might be drawn upon the stone, the paper on which it was printed was liable to shrink in drying.

Mr. Nelson, Hon. Sec. introduced the subject of parquetry for floors. He understood that the parquetted floors of Buckingham Palace had cost as much as 200*l.* per square.

Mr. Crace said that floors of that description might be executed at a comparatively trifling cost. He briefly described the process of their execution, stating that the inlay was cut by a machine, in order to ensure greater accuracy in the vertical position of the saw than could be obtained by hand labour.

The Chairman alluded to the analogous arts of Florentine mosaic, and Indian inlaid marbles. The latter, he observed, were remarkable for beauty of execution, but the recent specimens of Florentine work did not quite sustain its former reputation.

In reply to a question from Mr. A. J. Baker, Mr. Crace stated that only ordinary glue was at present employed for marquetry, though there could be no objection to marine glue as a greater protection from damp or heat. He further referred to the process of manufacturing the well-known Tonbridge ware, as a cheap and effective species of mosaic work. It was probably by some such process as this that the mosaic table of the Queen of Spain, exhibited in 1851, and containing between three and four millions of separate pieces, had been constructed.

THE CONTRACT TO LIFT THE SUNK FLEET AT SEBASTOPOL.

FROM an American source we learn some particulars as to the contract entered into by the Russian Government with Mr. J. E. Gowen, of Boston, U.S. for raising the sixty-four vessels-of-war composing the fleet sunk in the harbour of Sebastopol during the late war.

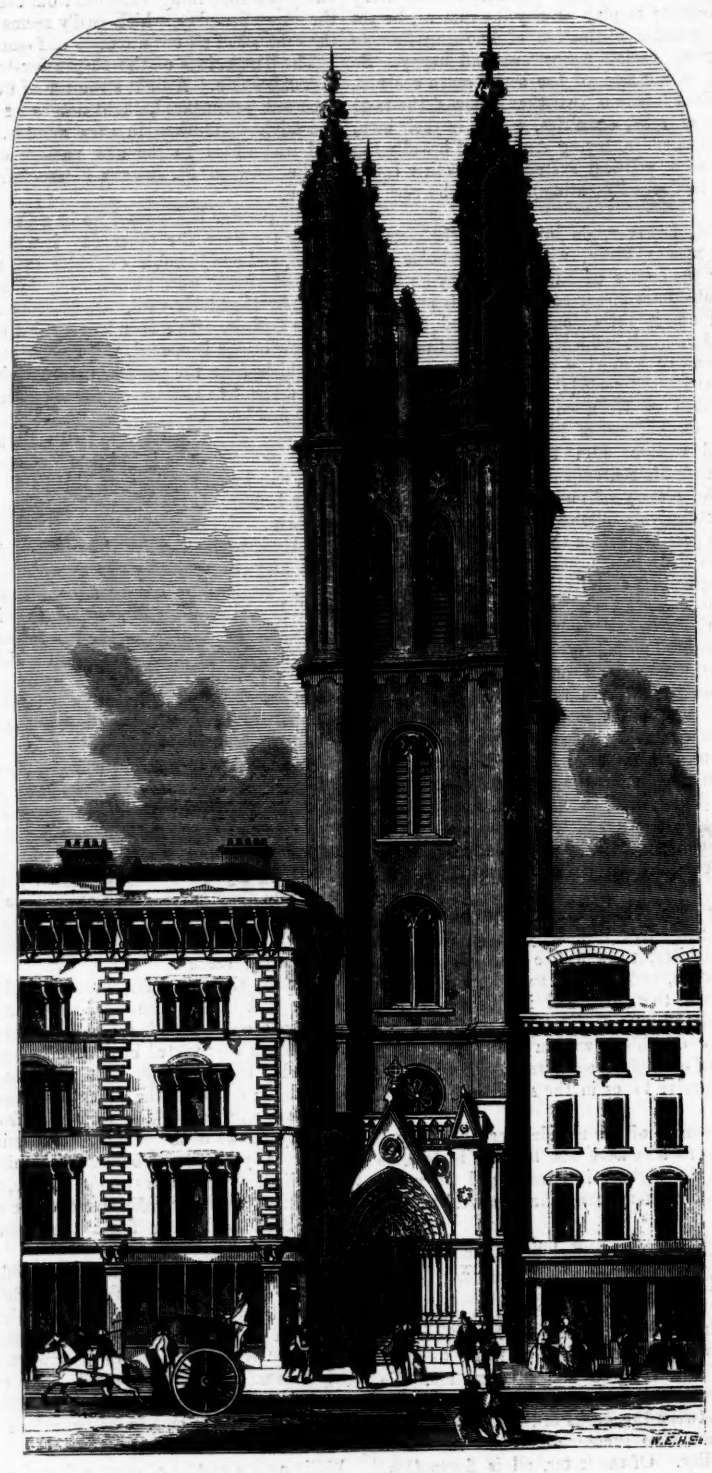
In the course of an examination of the condition of the ships, which occupied him for several months, with a Russian steamer at his disposal, Mr. Gowen descended with his sub-marine armour to the bottom of the harbour and examined the sunken vessels. He found that the channel of the harbour was in the middle, with banks upon both sides, that of the north being of sand, and that upon the south of mud. In the sand there were no worms: in the mud they were quite plentiful: the vessels exposed to the attacks of the worms are now but of little value, but it is said that only a small portion, comparatively, were sunk where they would suffer from their attacks.

The machinery of the ships, it appears, was carefully covered with a preparation of tallow to prevent injury from the water, but whether any of it still remains does not as yet appear. Mr. Gowen examined thirty of the vessels. The value of the whole fleet is said to be 65,000,000 dollars; and a certain portion of the value of each ship raised is to be handed to Mr. Gowen at the moment it is restored to the Russian Government.

The American expedition will consist of two vessels, one of which leaves Philadelphia on or about the 1st of April. The number of persons engaged to accompany it is about 150. Some of the hydraulic machinery for raising the vessels is of a colossal description, one cylinder alone weighing 54,000 pounds. The value of the material to be furnished by the Russian Government to be used in the raising of the fleet will be about 1,500,000 dollars; and the time occupied in performing the contract will, it is thought, be about eighteen months or two years.

At Kertch, there are also some five or six Russian vessels sunk, which are included in the contract, and in the harbour of Sebastopol there are some 600,000 dollars worth of chains and anchors. In addition to the expedition from America, the Russian Government bind themselves to furnish from 3,000 to 5,000 men, whose pay from Mr. Gowen will be about 25 cents. per day, they "finding" themselves.

Mr. Gowen gives some particulars from that now famous city. The Russian Government are engaged in rebuilding it. Before the siege it contained, it is supposed, about 60,000 persons. When Mr. Gowen was there about 6,000 had returned. Several thousand labourers were then engaged upon the works, and the number was to be largely increased. The old city was famous for its narrow streets: the new city will be built in squares. It is also said that there are restrictions against the erection of wooden buildings. The Russians, he says, have already gathered in the vicinity of the town more than 16,000 tons of shot and shell, and they are still so thickly scattered around that it is impossible to treat without touching them.



ST. MICHAEL'S, CORNHILL.

ST. MICHAEL'S, CORNHILL.

NEW PORCH.

THE old church of St. Michael, Cornhill, was destroyed by the fire of 1666, and the rebuilding of the body of it was commenced by Wren in 1672, in the style of other of his churches. The tower itself was weakened, and fifty years afterwards was taken down and rebuilt, it is asserted, by the same architect, the last stone being laid, according to Malcolm, August 29, 1721. Wren must have retired from practice at this time, but may have made the arrangement previously. Strangely enough, the architect, in rebuilding the tower, adhered to the Gothic style, and though the details are poor, the general outline is noble and effective.

It was long shut in, but a year or so ago some of the houses which intervened between the north side of the tower and Cornhill were cleared away, to obtain an entrance there to the church, and now a Porch has been built, and two stages of the tower itself have been repaired and altered, windows with tracery, and a new circular window with wheel tracery immediately above the porch, having been inserted. Our views show the general appearance and position of the tower, and the porch at large.

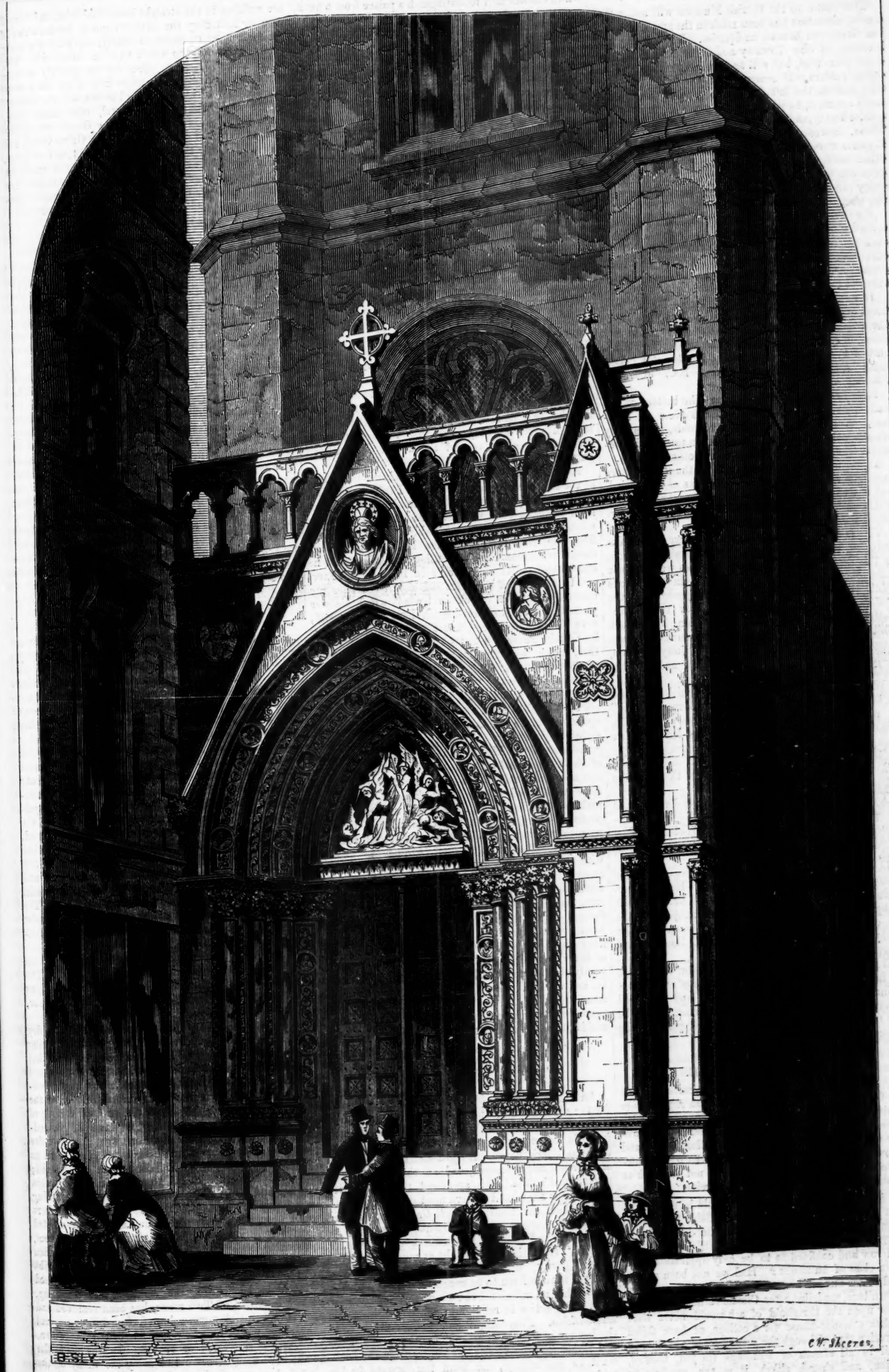
The only stone employed is Portland, of which the original tower is built. The six shafts in the jambs of the principal doorway are of red polished granite.

The sculpture in the gable of doorway represents Our Lord in the act of benediction. In the tympanum below is to be a group representing Michael disputing with Satan about the body of Moses. The other carving consists of medallions of angels, bosses of foliage, &c. which are liberally introduced throughout the work.

The porch is a parallelogram on plan, and is groined in stone. The side window will be filled with a subject in stained glass, by Mr. Bell.

The cost of the present work, including the carving (by Mr. Philip), which is an important item, will be about 2,500*l.*

Mr. G. G. Scott, A.R.A. in conjunction with Mr. W. A. Mason, who has long been professionally connected with the parish, are the architects engaged. Messrs. Browne and Co. of Great College-hill, City, are the contractors.



NEW PORCH, ST. MICHAEL'S, CORNHILL.—MR. SCOTT, A.R.A. AND MR. MASON, ARCHITECTS.

MOVES IN THE BRITISH MUSEUM.

THE visitor to the British Museum will notice that a great alteration has been made in the arrangement of the Greek and Roman antiquities. The placing and lettering of the Townley and other marbles are not quite completed, but will be so in a few days. Some of our readers will remember a narrow gallery, the first door on the left hand after passing through the main entrance, in which were many sculptures of exquisite beauty, and also of the greatest historical interest. These, however, were jumbled together: busts of Romans were by the side of those of Greeks; and the other antiquities were so arranged that, although even the uneducated visitor of taste might feel and enjoy the things of beauty there, he must have left the place with confused ideas.

Up to a certain height the wall has been painted of a kind of crimson "madder brown" colour, which is rich, yet subdued, and seems to throw out, with good effect, both dark colours and light. Against this background are arranged the Roman antiquities, in something of the following manner:—

In one group, marked in gilt letters—Roman portraits—B.C.—A.D. 10. On the bust of Julius Cæsar—B.C.—101—44. (It is curious to notice how much, in many points, this head resembles Roubiliac's bust of Pope, the poet, formerly in Rogers's collection.) Augustus—B.C. 63—imp.—B.C.—A D. 14. Tiberius—B.C. 42; and so on.

Near here are busts of Hadrian, the builder of the wall from Wall's-end, across the borders of Scotland,—Antoninus,—and a Roman female, with simply crisped locks. Then we have Roman tesselated pavements from the City of London, and other districts.

There are on the other side of the gallery more mosaic pavements and other antiquities of this period, and one of them is described as a sarcophagus found in Hampshire; and reference is made to the *Archæological Journal*, ix. 12.

This is the sort of detail, added to more minute description, which we want in this national institution. In this department of Roman antiquities we recognise some old acquaintances; amongst them the curious volute, ornamented with leaves, engraved in the *Builder* (see "Antiquities found near the Tower Postern"), and some fragments from Mr. Roach Smith's collection. Here is also the curious Roman sarcophagus found near the Holy Trinity Church, Minories, presented by the clergyman and churchwardens.

With this glance at the Roman antiquities, we pass on to the room marked "First Græco-Roman Saloon," in which are Olympic deities—Minerva, Apollo, Diana, Mercury,—various votive tablets, &c. Another group is lettered "Mythological Personages—Olympic Deities." How wonderfully beautiful is the head Diana, and fine the contrast between that and the splendid busts of Jupiter!

The subjects in the next room are divided, and marked "Subjects from Common Life." In this division is the Quoit Thrower, &c. "Historical Personages,"—Homer, Diogenes, &c.—"Real Personages,"—Demosthenes, &c.

In the next room of Greek antiquities are "The Heroes," Hercules, &c.,—"Muses, Heroes, and Heroines." Here are Castor and Pollux, &c. Another group is headed "Asiatic and Mystic Subjects." On the other side are mythological personages of the Dionysiac Cycle, where are figures of Bacchus and Satyrs.

It will be seen by these hasty notes how very much the interest of these magnificent works of ancient art is increased by the new description and classified arrangement; and we hope that the principle will be still further carried out in this and other parts of the Museum.

"GOTHIC AND CLASSIC."

I AM pleased to find that your correspondent "T. G." (p. 81) has favoured us with an *explanation* of his communication in the *Builder* of the 10th ultimo. It was much to be desired, for I had carefully read and reread his letter in question, to try and discover whether its author had cast even one favourable glance upon the Gothic style, but not so much as the shadow of a "wink" could I perceive.

It is quite true that a building should be expressive of its purpose; that we should not be liable to mistake a church for a mill, or an "Exeter-hall" for a theatre; but, are the principles of Gothic architecture so narrow and confined as to be only applicable to a certain class of buildings? Had we not been accustomed to see our civil structures, our homes, and even our furniture, modelled after Classic forms, the veriest loiterer upon the threshold of art would never have mistaken a manor-house for a college, or have failed to perceive that although the *principles* of a style may prevail in all classes of buildings (in jail, theatre, mansion, and church alike), it is the *application* of those principles to characteristic individual features which enables him to distinguish a palace from a bank, or a museum from a penitentiary.

I am really at a loss to comprehend in what school "T. G.'s" knowledge of Gothic was gleaned, when he describes it as "ignoring the use of materials to which not a little of the advancement of the present age is attributable," and as "a style of *stone* and *wood*." Can it be possible that your correspondent has never seen or heard of the *ironwork* which surrounds the tomb of a certain queen in Westminster Abbey? Have the numerous hinges, so exquisitely designed and so beautifully wrought, which cover the otherwise plain doors of the thirteenth and fourteenth centuries with a tracery of *iron*, escaped his observation? Does not the *lead* work of many a cathedral, the inlaid "*brasses*" upon the floors, and the numerous works in *silver* and *gold*, prove that the same principles which formed the groundwork of a structure in "*stone* and *wood*," would as readily and as easily have formed the basis of a cathedral in *lead* or *silver*, had these materials been more appropriate. It by no means necessarily follows that because a column of *iron* 2 inches in diameter can support the same weight as a *stone* column ten or twenty times the size, therefore it is more suited to columnar purposes. The Great Architect might have given us the spring of the grasshopper, or made our bone as tough as adamant; but yet who will venture to assert that either the one or the other would have been an improvement. But even granting that stone and wood are the *only* materials the Gothic architect can work in, it has yet to be *proved* that there exist other materials in *every* respect as suitable for building purposes.

All "T. G.'s" remarks on the introduction of colour at the expense of beauty of outline I fully agree with, but *beauty of form*, it is to be remembered, is not confined to *outline*, and may often be produced by colour when other means are unattainable. I am pleased to find, too, that this gentleman has discovered that Gothic architecture has something more than what he enumerated as its components in his former letter, and that *traceried windows* and *pointed arches* are now added to the "stock in trade" which he was pleased to afford to "one-branch hands." But still, with all due deference, I assert that a building may be Gothic and yet possess none of these features,—that, in fine, a mighty style like this is independent of the characteristics of a time or a locality, be they "hoodwinked" or "traceried" windows, "buttresses" or "pinnacles," panelled towers, or lofty spires. I believe, and sincerely hope, in spite of the opposition of the champions of the "Classic," that a style will *grow upon* the hitherto but little understood *principles* of the Mediæval style, as different as that of the fourteenth from that of the twelfth century, and as conformable to the progress of invention. I ask,—would such a style be *Mediæval?* Would not such a style be *Gothic?* For who amongst us will presume, for instance, to tether down to a time or people or creed, such forms as the trefoil and the quatrefoil. Shall we leave off twining our capitals with oak leaves, or stamping our tombstones with the cross? Shall we fail to fix the slope of our roofs with due regard to the elements,—the wind, and the rain, and the snow? or refuse to accept with thankfulness such lessons as the ivy and the vine, the hawthorn and the shamrock, teach us, because others have done the same? Rather let us, in humbleness of heart and singleness of purpose, read more diligently that volume of Nature which lies open before us, and we shall then more readily understand the constitution of the fine art which we profess, and more easily comprehend the studies of the Mediæval architect as he sings to us from the dusky past;—

> "The book I read is Nature's:
> Her simple truths appear;
> And, though she change her features,
> Her dictates still are clear."

And here, sir, I should have laid down my pen but for the closing observations of the first paragraph in the last letter of "T. G." Really, one would imagine from the tenour of his remarks, that Gothic architecture was utterly dependent upon aisles and chancels, and chapels and transepts, and all the *et-ceteras* of piscinæ and sedilia. His argument, therefore, is virtually, after all, what I believe most of the arguments to be which are nominally *anti-Gothic*, not against the *style*, but an ultra-Protestant outcry against certain revived *customs* and church *arrangements*, yeleped "Tractarian." I delight as much as "T. G." in the "purity" of the Protestant church; but this purity I must believe to be comparative, for I equally believe that no individual church or sect can *here* be pure. *Perfection* in religion or art is in this world unattainable. *Progression* and *retrogression* form the history of both the one and the other, and reforms and revolutions but mark the *changes* from the backward to the forward, and from the forward to the backward step. It behoves us, then, to consider well the direction in which *we* are moving,—whether we are walking in the straight course of wise and honest men, or imitating the crab, by going backwards: if the former, let us pursue it boldly, and with a pitying eye for all those who would have us turn aside; but, if the latter is our case, then let us quickly retrace our steps, endeavouring more and more to restore that likeness within us which has become so obscure by the accumulation of sin; and, with more faith, more hope, more love, exercise a deeper sympathy with all the glorious creations of the Great Good, and we shall find our architecture will reflect, as in a glass, the image of this likeness, and, endowed with the *life* of the inner man, approach more nearly the excellence of those works which God himself pronounced to be so "*very good*." E. W. GODWIN.

PROPOSED MEMORIAL TO THE LATE JOHN BRITTON.

THE subscription at the Institute of Architects is making gradual progress towards the amount contemplated, 100*l.*; and the committee have determined that their tribute shall take the shape of an incised brass plate in Salisbury Cathedral, the dean and chapter having readily consented to allow it to be set up there. Some of Mr. Britton's friends are anxious, as we have already mentioned, to give the memorial a more important character, and Mr. Tite, F.R.S.; Mr. Alderman Cubitt, Mr. Charles Hill, F.S.A.; Mr. Alderman Proctor, of Bristol, and others, have signified their desire to subscribe for such a purpose, for which about 300*l.* it is said, would be required. The Institution committee have expressed by a resolution their willingness to allow their incised brass to be combined with this restoration, if it can be effected, and to contribute towards it whatever might remain from their subscription, after paying for the plate. As a centre is needed, so that the good desires of the friends of Mr. Britton may be realised, we venture to state that communications on the subject may be addressed to Nathaniel Gould, esq. No. 4, Tavistock-square.

CHURCH-BUILDING NEWS.

Broxbourne (*Herts*).—The fine Perpendicular church of Broxbourne has been restored externally, and is now going to be reseated and thoroughly restored internally, at an expense of about 1,500*l.* under the directions of Mr. Joseph Clarke. It was built about ninety years before the Reformation, though leave seems to have been given to a Sir William Say to erect a chantrey on the north side; the following inscription running round the parapet:—"Pray for the welfare of Sir William Say, Knight, which founded this chapel in honor of the Trinity,—the year of our Lord God, 1577." The church has been much mutilated by the insertion of large and cumbrous galleries. These will be removed and the whole of the stonework restored, and the church handsomely seated. Mr. Bosanquet, of Broxbourne, will at the same time restore the chancel, and Admiral O'Brien the Say Chapel, both acting on the architect's plans and advice. It is a good specimen of Perpendicular work, and will be a very fine church when completed. The parish are much interested in the work, and assist heartily in the exertions of the vicar and churchwarden.

Romsey.—The new cemetery was consecrated on the 18th instant, by the Bishop of Winchester. The architect under whose superintendence and designs the cemetery has been carried out is Mr. W. E. Lower, of London.

Sherborne.—It has been discovered that the dry rot has set in in the joists which support the flooring of the north transept of Sherborne church, and that already an expense of nearly 50*l.* has been occasioned by it. The work of restoring the chancel is proceeding. The reinstating of the groined ceiling of the choir has been completed, and the groined ceiling of the south aisle is nearly done. The mode of proceeding, says the *Sherborne Journal*, was, first to raise large balks of timber to the chancel windows, and to pass them through the building from sill to sill; these timbers were bolted together outside by cross pieces, and when these were keyed up, the building was firmly and securely "boxed." On these timbers strong centreings were placed, and a platform erected for the workmen, who, having now reached the roof, proceeded to underpin each rib of the groin, and then to take out the panelling piece by piece. All the ribs of the choir ceiling have been taken out and raised from 8 to 10 inches; the whole of the panelling, which consisted of Tufa stone, has been removed and replaced by a rich warm-coloured Ham-hill stone, and thus, bit by bit, the whole roof has been taken down, and either re-erected or rebuilt. In the aisles the walls have been forced outwards by the decay of the heavy timbers of the roofs, the ends of which no longer rested on the walls, but pressed against them. The inclination is inconsiderable, and they have

settled firmly, and to adapt the roof to their position, wedges of slate and cement in the joints of the ribs are said to suffice. The cause of the outward disposition of the wall having been discovered, a recurrence of it has been guarded against. The buttresses of the south aisle have been rebuilt, with 5 inches greater projection. The whole of the flying buttresses either have been, or will be taken down, and reconstructed of large blocks of Ham-hill stone. Both the north and south doorways, and the south and north aisle windows have been reinstated. It will, therefore, be seen that a large portion of the works affecting the security of the building has been accomplished. Still there remain works considered amply sufficient to occupy the next twenty months. Mr. Digby went over the works lately, and is said to have been satisfied with their their progress.

Westleigh.—We recently mentioned the erection of a window in Westleigh church, near Bideford, Devonshire. Another has been put up in the same church, by Mr. Warrington, of London, being a memorial window, consisting of three lights, also Perpendicular in character, to the young and only son of Mrs. Cleveland, of Toply-park, Westleigh, who lost his life while serving with the army in the late Crimean campaign. The window is one of large dimensions, occupies the east end of the north aisle, and contains subjects from the life of David. The entire gable was taken down and rebuilt, and the new window of stone inserted from the design and under the direction of Mr. Arthur Billing, architect.

Rochdale.—The third contract for the restoration of Rochdale parish church has just been completed, including a new roof on the nave, and the rebuilding of the clerestory walls. The galleries on the south and west sides have been taken down, but it was thought necessary to build a smaller gallery at the west end. Further works are contemplated, for which the plans have been prepared by Mr. Joseph Clarke, the judicious course having been adopted by the committee of settling the plans for the entire restoration, and then each year completing a portion as the funds permit.

Doncaster.—The design for the memorial windows to the Elston and Saunders family, by Mons. T. B. Capronnière, Brussels, has just been completed. It represents remarkable scenes of Scripture history. The memorials will occupy two aisle windows at the west end. Each light contains two medallions, with six subjects for each window. The first represents the creation of man—the Creator meeting man in the garden — his expulsion — and the death of Abel, as showing the hereditary nature of sin. The second portrays the first destruction of Jerusalem and the Temple, with the captivity—Daniel and his companions—Nebuchadnezzar's dream—Shadrach, Meshach, and Abednego—the return to the promised land—and the rebuilding of the Temple.

PROVINCIAL NEWS.

Norwich.—The Free Library was opened on Monday in last week to all the citizens. The expenditure, either actual or estimated, has been as follows:—The site, including house, 1,850*l.*; amount of contract, 3,098*l.*; estimated extras, 95*l.*; extras for stone pilasters in lieu of brick, 70*l.*; cost of temporary cellar, 25*l.*; estimated cost of upper story, 700*l.*; cost of gas fittings, 120*l.*; total, 5,958*l.* Including bookshelves, stoves, and furniture, the expenditure will be about 6,500*l.* Sir Samuel Bignold advanced 4,000*l.* to the council in order to expedite the erection of the building. Mr. Benest, the city surveyor, was the architect for the new building, and Mr. Worman the contractor. The building is in the Italian style. There has been an erroneous impression among the citizens, says the *Norfolk Chronicle*, that the whole building is for the Free Library; but it includes accommodation for the Museum, Literary Institution, School of Art, and a public lecture-room.

Bedford.—The following were the tenders to erect a new lunatic asylum for the counties of Bedford, Hertford, and Huntingdon. The quantities were supplied:—

Jeeves, Hitchin	£73,786	4	6
Farrall, Manchester	64,909	0	0
Myers, Lambeth	64,164	0	0
Parker, Thrapston	58,742	0	0
Weatherby, York	58,175	0	0
Shaftor, York	58,148	0	0
Fergusson and Allen, Nottingham	57,875	10	0
Dennis, Islington	57,050	15	5
Kirk and Parry, Sleaford	53,909	6	3
Webster, Boston	53,626	11	11
Huddleston, Lincoln	50,809	16	2½

The tender of Mr. Webster, of Boston, was accepted, and it is expected that the works will shortly be commenced. Mr. George Fowler Jones is the architect.

Chatham.—The buildings and improvements now in progress at the dockyard will involve an outlay of upwards of 100,000*l.* Among these may be mentioned the lengthening No. 2 dock 160 feet, by Messrs. J. and C. Rigby. When completed this dock will be 360 feet in length. No. 7 slip is also being lengthened 60 feet, and the iron roof carried the same distance. Both these docks are of granite, laid on beds of concrete. Messrs. Foord, of Rochester, are erecting a large police-station near the saw-mills: the same firm have just completed a supplying kiln for steeping timber. A workshop, 240 feet in length, has been built for the convists, and close to this is a range of new buildings for cement mills. The improvement of Chatham Dockyard by convict labour will cost, it is estimated, 160,000*l.*

Tunstall.—At a recent meeting of the local Board of Health, a resolution was entertained, upon the recommendation of Mr. Robinson, architect for the Town hall, to the effect that the clerk give Mr. Wilkinson, contractor, formal notice that the Board would, under the terms of the contract, take the Townhall out of his hands, and proceed to complete it, in consequence of his having failed to carry out the contract.

Bristol.—The building in course of erection for the use of the Academy of Fine Arts and the School of Art, approaches completion. It is said to differ in character from any structure in the locality. An exhibition of local and metropolitan art is to be held at the new rooms in September next.——The foundation-stone of parochial schools for the parish of St. Nicholas with St. Leonards was laid on Thursday in last week. The schools, when completed, will accommodate 120 infants, 84 boys, and 84 girls. The building will have an ornamental blank front, in the Italian style of architecture, towards Back-street; the boys' school being lighted from the roof, while the girls' and infants' schools will have windows facing the playground. The infant school-room will be 42 feet by 22 feet, and 18 feet high; and the boys' and girls' schools 41 feet 6 inches, by 18 feet and 14 feet high. There will be a residence for the mistress. Messrs. Foster and Wood are the architects, and Mr. Samuel Bowden the contractor. The site cost about 700*l.* and the contract for the building amounts to 1,300*l.*

Pontypool.—Preparations are going forward for the erection of a new building for the branch of the West of England and South Wales Bank at Pontypool. The foundations are being dug in a field adjoining the Townhall.

Tamworth.—The building committee of the board of guardians of the Tamworth Poor-law Union, on Saturday week, received tenders for the erection of a new workhouse, according to plans and specifications of Mr. Nicholls, architect, of Westbromwich. The lowest tender was from Mr. Parnel, builder, Rugby, 4,473*l.* The other tenders varied from 4,545*l.* to upwards of 5,500*l.* We have received complaints from competitors that they cannot get back their designs.

Liverpool.—At a recent meeting of the Town-council it was resolved, that the tender of Mr. John H. Mullens, for the erection of the proposed public buildings in Dale-street and Hatton-garden, for 20,201*l.* 2s. 6d. (according to the plans of the surveyor) be accepted. The tender was the lowest of nine sent in.——It was also resolved to apply steam power to the machinery of the chain-tester, which was now worked by hand. The cost of the new building will be about 5,000*l.* and of the machinery from 1,400*l.* to 1,600*l.*

SCOTLAND.

Improvements in Edinburgh.—Masons were lately set to work in hewing stones on the Castle esplanade, for the new garrison place of worship. The new accommodation, according to the local *Post*, from which we adapt the present note, is to consist of an addition to the ancient chapel of St. Margaret's; the good taste of which arrangement is considered questionable. An angle in the Parliament House buildings has recently been completed, with a zig-zag piece of coarse wall, however, in proximity.——At Melbourne-place, George the Fourth's Bridge, the street will shortly be completed, adding another architectural feature to the old town: the houses are lofty, and are said to be of fine stone. Melbourne-place is completed by the extension to Victoria-street. An inlet from Victoria-terrace is completed by an arched gateway. Other buildings (of one story) have been erected westward from the terminal point of Melbourne-place. East of Fisher's-close a noticeable building is set down: it is of three stories, with lantern window.——To the north of the quaint old house of Allan Ramsay, the poet, Lord Murray is constructing a promenade. A statue or group, by Steele, is to be placed in the centre of the walk, in honour of the author of "The Gentle Shepherd."——The interior work of the Old Greyfriars Church proceeds rather tardily: the seating, however, is nearly finished. All the windows are to be of stained glass, and commemorative of eminent persons, the gift of the friends, relatives, and admirers of the deceased,—Lord Brougham, Principal Lee, and others, contributing memorials of this kind. The oriel window is completed, embodying in its several tableaux scenes from Scripture—as the sacrifice of Isaac. With the exception of a pigmy window above, which is of stained glass, none of the others are put up. The vestry is constructed aloft, and will be approached by a stair from the outer entrance, an expedient which leaves more accommodation within the church.

Perth.—The new Commercial Bank at the north end of Princes-street, Perth, is now ready to be roofed in. The building is in the Italian style. The Free Territorial Church, South-street, is nearly completed. Though plain in design exteriorly, the edifice, according to the *Constitutional*, is superior in point of architecture to the other Free Churches in the town. Preparations are being made for erecting a row of villas on the Glovers' lands at St. Leonards, on the north side of Craigie Burn. A macadamised road leading to the villas has already been constructed.——Workmen are excavating the foundation for the erection of the new wing and other additional buildings at the General Prison. The contractor is Mr. David Rae, of Edinburgh, and his estimate for the work appears, from the report just issued by the General Board of Directors of Prisons in Scotland, to be 27,397*l.*

COMPETITIONS.

Wellingborough Cemetery.—A meeting of the Burial Board of the Wellingborough New Cemetery was held on Tuesday, the 10th inst. for the purpose of finally considering and deciding upon the designs for chapels, lodge, &c. which had been sent in by various architects in answer to advertisements which appeared in the public journals. The designs bearing the motto "Nisi Dominus Frustra" were (we are told) unanimously adopted, and the successful competitor was found to be Mr. E. F. Law, of Northampton, who has received a commission to prepare the necessary drawings and specifications for carrying out the buildings.

Chatham Workhouse.—In this case there were nineteen competitors. The design by Messrs. Frederick Peck and E. W. Stephens, of Birmingham, has been selected as the best, and that of Mr. E. Holmes, also of Birmingham, as the second best.

Worcester Cemetery.—About fifty designs, we are told, have been sent in.

Bromsgrove Cemetery.—Eight designs for erecting a lodge, &c. and for laying out the new burial-ground, have been received, the estimates varying from near 600*l.* to 1,900*l.* Five of the more expensive plans were set aside, leaving the other three to be decided on. The Board at length decided upon accepting the plan submitted by Mr. C. H. Cook, of London, whose estimate was 575*l.* A competitor states that when he sent in his drawings, he received by return of post a printed circular with the vicar's name at the end, particularly requesting a subscription towards the funds for restoring the church!

ACCIDENTS CONNECTED WITH BUILDINGS.

Huddersfield.—At the theatre, in Huddersfield, while Mr. Cobden was speaking last week at a political meeting, a portion of one of the side galleries fell, precipitating about twenty persons, along with the beams, &c. on the heads of those beneath the gallery. Great confusion ensued, and there was a fear of greater mischief from panic; but the meeting was dispersed without further accident.

Liverpool.—On Saturday last five men were at work at a house in process of erection in Netherfield-road North, when the portion of the building on which they were engaged fell down, bringing along with it the scaffolding and four of the men, who were partially buried amongst the bricks and timber, and were severely injured. The fifth workman perceived the danger in time to spring upon two firm joists, and thus succeeded in saving himself. One of the men was so buried amongst the bricks, which wedged him in on every side, that it took half an hour to release him, and in a few minutes afterwards the wall fell down. The house was to have been opened as a public-house. "Great blame," says the *Albion*, "attaches to the owner, the builder, and, if we are correctly informed, to the building surveyor, inasmuch as the house, though of unusually large dimensions, and of three stories in height, had no foundation, being built immediately on the soft soil, while the outside wall, instead of being a 14-inch, was only a 9-inch wall. We understand that another house, in the same neighbourhood, also came partially down on Saturday."

Edinburgh.—An accident took place, on Wednesday in last week, at the Caledonian Distillery, Haymarket, in consequence of which one life was lost,

several persons were injured, and considerable damage was done to property. An addition to this extensive distillery was in course of being made by the erection of a malt barn about 300 feet long by 75 feet in breadth, and four stories in height. An iron roof was nearly finished, part of the supporters of which were pillars rising from the ground. Simultaneously the floors were being laid upon iron girders and brick arches, supported in part by the same pillars. The building was therefore to be fire-proof in every story. About a third part of the work of building the brick arches had been completed, when, suddenly, something was heard to snap about the roof. Immediately the whole covering, and a great part of the internal structure, gave way in a series of crashes, and in a few moments there was little left except the exterior of the building, and a mass of ruins inside. About thirty or forty men were at work within the building, but they all escaped with life, except one man, who was struck on the head by an iron beam, and almost instantly expired.

Attyflin (*Limerick*).—On Thursday week the metal bridge crossing the Limerick and Foynes Railway at Attyflin fell in, completely blocking up the line. The first train was within fifteen minutes of being due at the moment the accident occurred, but it was fortunately stopped, and 100 workmen were set at once to clear away the rubbish. The loss will fall on Mr. Dargan, the contractor, and the expense of replacement, it is said, will be heavy. Fortunately no life was lost.

NEW SCHOOLS OF ST. THOMAS CHARTERHOUSE.

ON the 19th, these schools, situated in Golden-lane, St. Luke's, and commenced in May last, were formally opened by H.R.H. Prince Albert, who spoke admirably and with great feeling on the occasion. Some effect is obtained in the building by the alternate use of red, black, and buff-coloured bricks. On the ground story is the infant school, which is 66 feet by 29 feet, and 13 feet in height, to which is attached a well-paved and airy playground. The girls' school, on the first floor, is of the same dimensions as the infant school below, and has leading from it a lecture-room 28 feet by 14 feet. The boys' school is on the top story, and is 67 feet by 30 feet, and 13 feet high at the sides, and 17 feet in the centre. The lecture-room attached to the boys' school is of the same dimensions as that on the first floor. There is a basement story, containing kitchen, scullery, &c. and a heating apparatus. The desks are constructed to accommodate 264 boys and a similar number of girls. There are also desks in the galleries for 372 infants, thus giving ample accommodation for 900 children. All the rooms are lighted with gas, which renders them very suitable for evening classes for adults, or those whose occupations prevent their attendance during the day-time. The total cost of building, fittings, &c. with 2,200*l.* expended in the purchase of the site and the play-ground, was 8,452*l.* The building was designed and constructed by Mr. Hesketh, the architect, who constructed the other schools of the district, which, with those just completed, are capable of accommodating 2,500 pupils at one time.

ON RECENT IMPROVEMENTS IN THE MANUFACTURE OF IRON.

A REPORT was read lately to the Fellows of the Chemical Society, by Mr. Abel, director of the chemical establishment of the War Department, on the above subject.

The first portion of the report was devoted to a consideration of proposals relating to the construction of the blast furnace, the application of the blast, the mixture of ores, &c. with the view to ensure uniformity in the working of the furnaces; the preparation and state of division of the ore, and its mixture with fuel and fluxes; the economisation of fuel and heat; and the description of fuel employed. The last was considered to be a subject of much interest from the circumstance that the very considerable iron resources of Ireland might be expected to rise to great importance, if the application of peat in one form or other, as the means of reducing and refining the metal, proved as successful as was anticipated by numerous persons, whose attention had been devoted to the subject.

A review was next taken of the numerous plans proposed for effecting the reduction and purification of the metal in one continuous operation, none of which were considered as likely to compete successfully with the present system of iron smelting. Allusion was also made to the system of producing refined iron or steel direct from the ore in the United States, in the so-called bloomery forges.

The second portion of the report related to the application of other agents than those in general use in the manufacture of iron.

After an examination into numerous proposals for improving the ordinary refining and puddling processes, patents were noticed in which water was made an agent in the purification or decarbonization of the metal, by coating its surface, when in a divided condition, and prior to its final treatment, with a covering of oxide of iron.

Recent patents relating to the production of steel from refined or wrought iron by fusion and by cementation, with the employment of particular cementing materials and fluxes, and of contrivances for rendering the cementing operation a continuous one, were next noticed, and this led to the discussion of the several patents brought out by Mr. Bessemer for the production of steel and malleable iron. Other patents, such as those of Mr. Martein, Mr. Parry, and Messrs. Lea and Armitage, bearing upon the same principle, were described, and notice was taken of the effects of this particular mode of treatment upon iron. It was held that the results of experiments with Mr. Bessemer's process, and of the chemical examination of his products, had not served to bear out the statements made by him in his paper read before the British Association last year.

The report concluded by pointing out the great extent to which the puddling process depended upon the skill and industry of the workmen, and by showing that this was sufficient reason to lead all interested in iron manufacture to cherish the hope that the continued exertions of Mr. Bessemer and others who are now actively engaged on the subject, might lead to the successful application of the principle upon which was based the process which had excited such general attention, so that the prophecy of Mr. Nasmyth, that it would lead to a new era in a most important branch of our manufactures, might ultimately be fulfilled.*

SINGULAR PRESERVATION OF THE TOWER OF LONDON IN 1691.

WE are indebted for the following interesting extract to Mr. Lemon, the editor of "The Calendar of State Papers:—

"9 *July*, 1691.—Her Majesty in Councill having received an account that by the fall of part of one of the floores this morning in the White Tower, where the powder was lodged, about two thousand barrells are fallen through and lye upon the next floore; and that the keeping of so great a quantitie of powder as at present is extreamly dangerous to the Tower and City of London, Her Majesty is pleased to order the Rt. Honble. Sir Henry Goodricke, Knt. and Bart. Lieutenant Generall, and the rest of the principall officers of the Ordnance, to consider of a fitt place or places where the stores of powder may be conveniently lodged, as well for the security thereof, as of the Tower and City of London."

The fact of a large flooring at once giving way, and 2,000 barrels of powder being precipitated through to the floor below, without the least spark of fire occurring, is a most wonderful instance of preservation.

THE GOVERNMENT OFFICES COMPETITION.

DEAR MR. EDITOR,—Pray put your head into Westminster-Hall, and see the official doings there for the forthcoming Exhibition of Designs. The hall is being divided into small compartments, which some liken to sheep-pens, and some to eating-house boxes, but which will, I fear, considering the darkness of the hall, prove very slaughter-houses to the unfortunate drawings which may be committed to them. Pray give the officials a jog, for Sir Benjamin Hall can have no wish to do otherwise than exhibit the designs well and conveniently. NEMO.

*** We understand that 192 British competitors have sent in designs: those from abroad have yet to be received. Some of the packages include drawings for the three competitions, some for two of them, so that the number of designs is of course greater than the number of competitors.

WREN'S MODEL OF ST. PAUL'S.

I PERCEIVE that some attention is at length being called to the model of Sir C. Wren's first design for St. Paul's, now decaying from want of care; little known, from its secluded position, and no way serviceable, except as one of the twopenny sights in our great show cathedral.

But it is surprising the architectural world does not seek for more than its restoration and improved position. It should be made known to the many who may have no opportunity of thoroughly inspecting it in its show-room; nor can I doubt but the publication of a quarto volume, fully illustrating it, with plan, elevations, sections, and views, would repay the time and outlay of any competent person who might undertake it.

In Elmes's "Life of Wren" there is a *plan* of the model—and a great provocative it is to the desire for more. In the hope that this suggestion may somewhat assist in promoting a result alike beneficial to the fame of Wren and the cause of original design—I am, EX-ARCHITECT.

* A pretty full report of the whole will be found in the *Engineer* journal.

TENDERS FOR DRAIN-PIPES.

HAVING regularly taken the *Builder* from the commencement of its publication, I have always considered it a proper channel for promoting the interest of everything connected with the building trade, and as far as possible exposing any abuses that were detrimental to its interests. Allow me, therefore, to call your attention to a practice which ought to be exposed. A few days since I inspected a specification for work to be done as drainage, at the east end of London, and to my surprise, there found it stipulated that the pipes to be used were to be of Messrs. ——'s manufacture. Whether or not the insertion of such a stipulation was founded upon any peculiar ground, I am unable to say, but if not, it was the most gratuitous injury to the engineer's employer that can well be imagined. Competition was quite out of the question, and I refused to tender. Had I obtained the contract, I was bound to purchase of the parties named, without reference to price, which at the present moment varies from 10 to 50 per cent. according to the situation of the purchaser, as to freedom to purchase, and I have seen instances where pipes have been used that would have been rejected if from any other maker. A CONTRACTOR.

RECENT BUILDING PATENTS.*

1755. CHARLES BURTON, Regent-street, London. —*Warming Houses and other Buildings.* Dated 24th July, 1856.—In carrying out this invention, air is led by a shaft from the top of the house or other building to a chamber in the basement, in which is a fire surrounded by concave or other reflectors, so arranged as to concentrate the heat of the fire to warm the air, and from this chamber the warmed air is conducted by turned pipes to the rooms or other places to be warmed. The air is forced down the shaft to the warming-chamber by means of a screw or other instrument (in the shaft), which is put in motion by the force of the wind. In order to regulate the amount of heated air discharged into the room or other place, a valve is employed, which is opened more or less by a self-acting apparatus, consisting of an arrangement of levers put in motion by the expansion and contraction of a bar of metal or other material exposed to the temperature of the room or place.

1060. W. GREGORY.—*An Improvement in the Construction of Roofing Tiles.* Dated 5th May, 1856.—The patentee forms in the arched lapping piece of each tile (except the eave tiles) a recess or cup to receive the ends of the arched lip of the adjoining tile. This recess or cup he makes of a depth equal to the width of lap required for two adjoining rows, and the workman or tiler is thus provided with a gauge for fitting the tiles together. He also forms recesses at the opposite edges of the ridge tiles, so that they will completely overlap the upper edge of the top row of tiles at the opposite sides of the ridge, and produce a water-tight joint, which may, when desirable, be further secured by a thin line of mortar or cement.

1777. JOSEPH PLATT, Audlem, Cheshire.—*Door Knockers.* Dated 26th July, 1856.—This invention consists in peculiar mechanical arrangements, by means of which the knocker is operated by a suitable handle on the outside of the door, causing a hammer or knocker to strike on the inside. The handles may be variously constructed to turn, or to pull out, or push inwards; and the hammer, knocker, or other alarum may be connected with the outside handle by springs, ratchet wheels, or other like contrivances.—*Not proceeded with.*

1172. J. J. MEYER.—*Improvements in Machinery for Mortising, Tenoning, Rounding, Sweep and Straight Moulding, Boring, Grooving, and Mitreing.* Dated 17th May, 1856.—These relate to certain combinations of parts constituting a machine in which the operations of mortising, tenoning, rounding, sweep and straight moulding, boring, grooving, and mitreing may all be performed, instead of employing separate machines for these purposes, as heretofore. And a feature consists in an improved mode of forming the following cutting tools:—the mortising chisel, the tenon cutters, the cross revolving moulding cutter, the mitre wheel or cutter, and the grooving cutter.

977. J. BARBOUR.—*Improvements in Sawing Apparatus.* Dated 23rd April, 1856.—The saw blade to be used is made in the form of an endless belt, which is passed round two pulleys, and kept properly stretched by screw or other adjustment, by which the bearings of the two pulleys can be separated more or less.

1769. ROBERT STEWART, Glasgow.—*Cutting Stone and other Mineral Substances.* Dated 2nd July,

* Gleaned from lists in the *Mechanics' Magazine*, the *Engineer*, &c.

1856.—According to one modification of the improved apparatus, a suitable sole or bed is laid down for the traverse upon it of a carriage carrying the cutting tools, the stone to be cut being placed beneath. The machine may be furnished with any convenient number of cutting tools, arranged in a line one behind the other, and following each other in the cut. The cutting action is made to take place by raising and letting fall a bar, which is of considerable weight, and causes the cutting tool to forcibly strike the stone, and so effect an increment of the cut. The carriage may be moved forward by hand, by means of a suitable lever connection with the running wheels, or a self-acting feed motion may be employed. In some cases the carriage may be kept stationary during a number of strokes, so that the cut may be made vertically downwards on the side of the stone, or at any other part.

1805. GEORGE HOLCROFT, Manchester, and PETER JOHNSON, Wigan.—*Improvements in the Manufacture of Cement, and in the Application of a known Material to Cementing Purposes.* Dated 31st July, 1856.—This invention consists in manufacturing cement of sulphur combined with sand, gypsum, or any other suitable material; also, in the application of sulphur alone for cementing the joints of stones, or as a substitute for cement when used for any other purpose.

1870. WILLIAM GORSE, Birmingham.—*Improved Door Fastener.* A communication. Dated 8th August, 1856.—This door fastener consists of a plate of metal inserted between the door-post and the edge of the door, the said plate being secured to the door-post by the closing of the door. The plate carries at its projecting end a plate, arm, or bolt, which, being brought against the door, prevents the said door from being opened.

1885. JOHN CARTLAND, Birmingham.—*Improved Door Spring.* Dated 11th August, 1856.—This invention consists essentially of a heliacal or coiled spring of steel, iron, brass, or other wire, the said spring being acted upon in such a manner, by its connection with the door or door-hinge, that the said spring shall be coiled or uncoiled at the opening of the door. The elastic force of the spring is exerted by a winding action, instead of a lengthening or shortening action, as is usual with heliacal door-springs.

Books Received.

Practical Suggestions for relieving the Overcrowded Thoroughfares of London, securing improved Means of Locomotion, directing the Sewage from the Thames, and appropriating it to Agricultural Use, &c. By JOSEPH MITCHELL, C.E. Stanford, Charing-cross.

THESE practical suggestions assume the form of a letter to Sir Benjamin Hall, as chief commissioner of the Board of Works. The principal feature in the vast scheme proposed is the formation of a great street or road, leading in a straight line, or nearly so, from Kensington-gardens to Shoreditch Station, with a metropolitan railway adjoining it, in a sunk track, and a main sewer under the railway, which latter it is proposed to unite on the north with the metropolitan railway already sanctioned by Parliament, and on the south with the South-Western and other lines, by a branch crossing Waterloo-bridge, on an iron way raised above the bridge. The proposed sewer, the projector remarks, would drain all London north of the line, and would be continued from Shoreditch along and near the Eastern Counties Railway, beyond the river Lea, where the sewage would meet that of the lower portion of the metropolis and that of the south side, as proposed by Mr. F. Foster and Mr. Bazalgette, and thence the whole be sent through the agricultural districts, and to the sea. Mr. Mitchell also proposes, in connection with his road scheme, the erection of a new palace in Kensington-gardens, to be partly devoted to the national collection of art-works, and partly as a residence for her Majesty. The line of street and roadway, he observes, would interfere with no public buildings of importance: it would pass chiefly through property of inferior value, except the north side of Grosvenor-street, and would pass by and cross the enclosures of several of the London squares. There would be 70 feet of carriageway, with footpaths of 24 feet, on each side, or a width considerably greater than Regent-street, which is 50 to 54 feet wide, with footways of 18 and 21 feet. The construction of Regent-street, one-and-a-half mile in length, cost 1,533,582*l.* The cost of the proposed new line of road, with a branch to the post-office, in all say four miles in length, is estimated proportionally at 4,089,552*l.*; or with additional width of street, railway, &c. 6,502,387*l.* to which is added cost of railway, 1,976,330*l.* and of new palace, &c. at Kensington, 1,500,000*l.*; or in all (not including three-and-a-half millions, for the main sewer and whole drainage), 9,978,717*l.*! The estimate of revenue is set down as follows:—Revenue of new street (ruled by known revenue of Regent-street, viz. 39,000*l.*), 97,500*l.*; to which add 10 per cent. for additional attraction and thoroughfare, 9,750*l.*; revenue from railways, 180,000*l.*; in all 287,250*l.* being nearly 3 per cent. on 9,978,717*l.* The sewage, if applied in irrigation, as at Edinburgh, would, it is estimated, yield a clear revenue of 472,500*l.* or a profit of 262,500*l.* to which the author adds 287,250*l.* as estimated revenue from rents of new street and from railways, and remarks, that the 549,750*l.* of revenue derivable from the whole of these improvements, would be about 5½ per cent. on the capital of 9,978,717*l.* required, forgetting, however, that in this sum the three-and-a-half millions of first cost of the drainage is not included.

We have preferred thus occupying our limits with a condensed and brief abstract of Mr. Mitchell's scheme, without displacing anything by the insertion of any observations of our own, and will simply add, that *even* ten millions, if that sum would do it, might, as it seems to us, be better spent with the same end in view.

The Art of Valuing Rents and Tillages. Originally written by Mr. BAYLDON. Seventh edition, enlarged, by ROBERT BAKER, Valuer. London: Longman and Co.

"BAYLDON on Rents" has long been indispensable with all concerned in the valuation or the management of land, and this last edition contains much that is new, especially with reference to the principle of Michaelmas entries and the valuation of property for assessment. It is the best existing book of the kind.

Mr. Baker, in his preface, urges that it daily becomes more and more imperative upon landed proprietors to give due encouragement to their tenants, by affording them the utmost security for the investment of their capital, "not alone by removing such absurd restrictions in leases that hitherto have existed, but by giving security, by valuation, for unexhausted improvements."

He proposes the abolition of the yearly tenancy altogether, and the substitution of a lease for a term of one year, with clear clauses as to cropping and the mode of quitting.

Miscellanea.

DONCASTER NEW PARISH CHURCH.—A month or two ago it was found necessary, before proceeding with the tower, to appeal for an additional subscription of 10,000*l.* the funds obtained by the first subscription, amounting to about 30,000*l.* being exhausted. The amount subscribed has now reached the sum of 8,600*l.* Although this is 1,400*l.* short of the money required for the completion of the church, it has been deemed sufficiently large by the building committee to warrant them in continuing the works of the church, which would otherwise have shortly been suspended. Arrangements have been made with Messrs. Warner for a new peal of bells, which will be cast under the direction of Mr. Denison. Mr. Dent has promised to supply a clock gratis for the tower. Mr. W. Foreman, of Surrey, has rebuilt the south chapel entirely at his own expense.

LONDON ATMOSPHERE.—What a destructive agent is the atmosphere of London! I observe that the Roman Catholic Church in St. George's-fields, built a few years ago by Pugin, is already wearing a most *autumnal* aspect: its foliage is rapidly decaying, and in a few more years its crockets and finials will be numbered with the things that have been, and we shall then be enabled to judge what will be the effect of a fourteenth-century building deprived of those interesting excrescences. Should they be equally disposed to crumble and fall off from the surface of the colossal structure in the same vicinity,—the Houses of Parliament,—we shall have a somewhat alarming bill to pay per annum for new crockets. A consideration of the destructive nature of London atmosphere should have some influence in deciding on the style and character of the future Government buildings.—ANTI-CORROSION.

ROTTING OF GUTTA-PERCHA UNDER GROUND.—An investigation has been made by Mr. E. Highton, into certain cases of decay in the gutta-percha covering of the underground wires of the British Electric Telegraph Company at Berkhampstead and elsewhere, which results in the discovery that the mycellium of a fungus which frequently grows on the dead roots of oak trees, and sometimes under hawthorn hedges, occasionally affects the gutta-percha covering telegraphic underground wires, fermenting and rotting the gutta-percha in spots where the fungus prevails, while immediately adjoining, no such decay appears. The cause of this occasional annoyance having been thus discovered, doubtless some mode of obviating it will soon be found.

LECTURES ON ART-EDUCATION AT LEEDS.—Mr. G. Jackson recently delivered two lectures before the members of the Leeds Mechanics' Institution and Literary Society, "On Art-Education." The lecturer commenced by asserting that no nation had ever excelled Great Britain in the development of the abstract mechanical sciences, and that it might as truly be said that no nation had done less to promote the national, social, and commercial importance of the arts. This could not be attributed to any want of talent, but it might rather be taken as a demonstration that the old proverb which said that two things could not be done at the same time would apply to nations as well as to individuals. Attention had begun to be directed to the importance of art, and to the national necessity of it being encouraged. It would, therefore, be his object to point out what constituted the elements of art, and how to impart a knowledge of art. Mr. Jackson's second lecture was devoted to the consideration of the necessity of the principles of art forming part of all systems of elementary education.

CRYSTAL PALACE DISTRICT GAS COMPANY.—At the third annual general meeting of this company, on 3rd inst. it was announced in the directors' report that during the last year the number of private consumers had largely increased, new railway stations had been lighted, and public lighting had been commenced throughout the district. In 1854 (half-year), the gas rental, it was stated, was 1,736*l.* 16s. 11d.; for the entire year 1855, 5,078*l.* 8s. 8d.; and in the year now passed, 1856, 6,535*l.* 19s. 11d.; and it was estimated that the company are now in possession of a gas rental of nearly 8,000*l.* per annum. The profits on the year amounted to 2,297*l.* 8s. 1d. out of which a dividend was declared on the paid-up capital of the company at the rate of 5½ per cent. per annum, leaving a free balance to be carried to the profit of next year.

INDICATER TILES.—Mr. B. Looker, jun. of Norbiton Pottery, Kingston-on-Thames, has forwarded to us specimens of some new "Indicater Tiles," which he has introduced as a suggestion for marking the new Postal Districts ("E C," "W C," &c.). They can be made of any size or shape, and in any description of earthenware. The specimens forwarded are composed of ordinary tile clay, and the letters are coloured with a permanent vitrified black. They are rather rough and imperfect, however, being the first he has made. They are 9 in. by 6 in. (the length of one and the depth of two bricks), for the facility of fixing in a wall, and can be produced and sold at something like 6d. each.

DUBLIN.—The foundation stone of the new church of St. Patrick, Celbridge, was laid on Sunday in week before last. The architect is Mr. J. J. M'Carthy, and the design is Early Gothic. Mr. R. Farrell, of Dublin, builder, is the contractor. The site is at the rear of the present parish chapel. The new church will be 130 feet in length, and 60 feet in width. It will comprise nave and side aisles. At the end of the north aisle will be placed the chapel of the Sacrament, and at the termination of the north aisle will be erected the chapel of the Virgin. The great oriel window of the church will be a triplet of stained glass. Another end of the edifice will also have an illuminated window, the designs of each being commemorative of some great event of Gospel history. The building will be of solid limestone, with Gothic front and belfry. The interior will be completed with open woodwork roof, and with the usual Early Gothic decorations. The church of St. Catherine in Meath-street, now finished, and the church of St. Saviour in course of completion, were designed by the same architect.

THE SOCIETY OF ARTS' EXHIBITION OF INVENTIONS.—This exhibition is now open to the public, and will continue to be so till about the end of May. By next week the arrangements will be more matured, and the articles exhibited more numerous than at present, and we shall then take an opportunity of noting some of the more important and interesting features of the new exhibition.

GOVERNMENT ARTISANS AND EMIGRATION.—Upwards of 2,000 workmen in various departments of Woolwich Arsenal, having received notice to leave, in accordance with the reductions in the last army estimates, a memorial has been adopted at a large meeting of the men, and forwarded to Lord Panmure, strongly recommended by the heads of the departments, praying the Government to grant a free passage for themselves and families to the Canadas, Australia, or elsewhere. The memorial, it is said, has received the favourable consideration of the War Office.

ENCAUSTIC TILES TURNING DULL.—Having the floor of a balcony of considerable length laid with Minton's tiles a few years ago, I find they become very dull at all times except when wet. Perhaps you, or some of your readers, could inform me if anything could be done in the way of glazing or varnishing them, so as to improve their appearance?—F. K.

LIVERPOOL ARCHITECTURAL SOCIETY.—The twelfth meeting of this body was held on Wednesday, the 18th, when the chair was taken by Mr. James Hay. Mr. Frank Howard read the paper of the evening, "A Description of Pickering Church, with reference to the Principles of Decoration."

ST. HELEN'S, BISHOPSGATE.—During the last few days a house, supposed to have been built in the reign of James I. adjoining to this interesting specimen of church architecture, which escaped the Great Fire of London, has been pulled down, by which means many points in the exterior of the south choir, which had been ruthlessly blocked up, have been brought to light. Amongst other discoveries, a window has been laid open, the greater part of the mullions and glazing of which remains entire, as they were covered over with plaster when the church was made the party-wall of the adjoining house. Several windows of Norman character have also been discovered.

EXTENSIVE DRAINAGE WORKS IN NORWICH.—The drainage of the northern part of Norwich was again discussed in the Local Board of Health, on Tuesday in last week; the reports of the surveyor and of Mr. Donaldson being placed in the members' hands. From the surveyor's report it appears that with a view to the ultimate diversion of the whole of the sewage of the city from the river, he has so arranged the several lines of sewers as to secure but one outfall for the whole drainage of this northern district, at a spot most convenient for extending the sewer to an outfall beyond the limits of the city. The system of drainage consists of one main sewer, two collateral sewers, and twenty-nine branch sewers. The main sewer has a total length of 7,314 feet. The two collateral sewers are respectively 1,818 feet and 4,462 feet in length. From the main sewer there are nineteen branch sewers, in all 8,467 feet in length; from the first collateral sewer four branch sewers, 2,113 feet in length; and from the second collateral sewer six branch sewers, 2,911 feet in length. These works must be executed with borrowed money, to be repaid by instalments in thirty years, being a fraction over one penny in the pound on the assessable property in the city, or an additional half-penny rate in the half-year; each year lessening as the principal is paid off. Mr. Donaldson's report approves of the surveyor's plans, with the condition that the outfall be carried about 150 feet farther down the river. It recommends that the sewage be deodorized by the use of lime, on sanitary grounds, and also as a means of preventing the accumulation of sewage deposit in the river, although the sewage deposit will probably be sold at a price that will merely cover the cost of its production. The Paving Committee of the Board were authorised to advertise in the local press and the *Builder*, for tenders for the execution of the proposed works,—the Board at the same time reserving the right of further discussing the details.

PAINTING ON CEMENT CONTAINING SEA-SAND.—A correspondent, "G. E. R." asks for information as to how the salt in cement made with sea-sand can be prevented from destroying paint laid over the cement. This is just one of the forms of the difficult question how to obviate the unsightly stains on walls from salt contained in the lime or cement used in their formation, a question often treated of in our pages. If we understand our correspondent aright, what he desires to know is how to prevent the salt from injuring or destroying paint made of ordinary materials of the best kind, not merely how, by some new kind of paint, to subdue the salt, or prevent it from appearing on the surface.

ILLUMINATED CLOCKS.—Having read some letters in your paper about illuminated clock faces, it appears to me that the figures might be formed of gas-piping, which might be pierced for jets, and so become figures of fire at night.—PARTHENON CLUB.

ARCHITECTURE AT SYDNEY.—The foundation-stone of a mansion to be erected at Rose Bay, near Sydney, New South Wales, for Mr. Daniel Cooper, speaker of the House of Assembly there, has been laid by the Governor-General, the Bishop of Sydney having said a prayer over the stone. The building is to cost 100,000*l.* of which sum, says a Sydney paper, the architects, Messrs. Hilly and Mansfield, will have a share of 10,000*l.*

MONUMENT FOR EDGCOTT CHURCH.—A monument, to the memory of the late Mrs. Cartwright, of Aynhoe, has just been executed by Mr. Grimsley, of Oxford, sculptor, from a design furnished by him. The monument, which is in Caen stone, is in the Decorated Gothic style of architecture, and consists of three niches: the large one in the centre is filled with the tablet, and in each of the other niches is the figure of an angel, moulded by Mr. Grimsley, sen. The monument, says the *Oxford Journal* in speaking of it, differs materially from those ordinarily executed, inasmuch as it is a happy combination of architecture and sculpture carried out so as to justify its occupying a high position as a work of art.

GAS.—The directors of the Southampton Gas Company have reduced the price of their gas, to 5s. a thousand cubic feet.——The Margate Gas Company have declined to accede to the demands made upon them and determined on at a recent meeting of gas consumers, namely, to charge 4s. 6d. per 1,000 feet instead of 6s. with a better supply and of better quality.

THE LATE MR. PLAYFAIR, ARCHITECT. — The *Edinburgh Courant* says, — We have to record the death of the greatest of our northern architects—the man who, more than any other, has filled the Scottish capital with monuments of his genius. William Henry Playfair died on Thursday, 19th inst. after a long illness, which had for some years paralysed his limbs, and for the last day or two made him insensible to everything. Mr. Playfair was born in London in July, 1789. He came of no undistinguished stock. His father was an architect of note in his day, although his reputation has long been obscured by the brighter eminence of his son; and his uncle was the celebrated mathematician and natural philosopher, Professor John Playfair. He had the advantage of being educated under the roof of the latter, at a time when Lord John Russell was not the only pupil of mark whom it sheltered. At a subsequent period he accompanied his uncle in that continental tour which occupied the closing years of the geologist's life.

STRIKE OF MASONS NEAR SOUTHAMPTON.—The large body of stonemasons employed at the works of the Victoria Hospital, Hamble, are under strike, and maintained by the General Society of the Trade, each man receiving 14s. a week. The men, according to the *Hampshire Advertiser*, desired to leave work on Saturdays one hour and a half earlier than usual, to enable them to get home to Southampton and other distant places; but with this the contractor stated that his contract did not permit him to comply.

GUERNSEY HARBOUR WORKS.—The contract for the new works at Guernsey Harbour, according to the *Jersey Times*, has been virtually assigned to Mr. Coulthard, whose tender was much lower than those of Messrs. Le Gros and Gallichan and the other competitors. "The doubt," says a Guernsey paper, "which has been entertained as to whether Mr. Coulthard understood his own business was entirely dissipated by an examination of his figures. It was found that, where labour and materials were estimated, these items were set down at higher figures than in the other tenders, and that the saving which enables him to tender so much below his competitors was to be effected by the modern appliances of mechanical science, which formed no part of the other plans."

SCHOOL OF ART FOR READING.—A public meeting was held in the Townhall, Reading, on Wednesday evening before last, for the purpose of receiving a report from the committee (appointed at a meeting held about three months back) of their proceedings in arranging the preliminaries necessary to the establishment of a Government School of Art in Reading. It was resolved unanimously that such a school be forthwith formed in Reading. The president, vice-president, treasurer, and committee, were then appointed.

THE IRON TRADE IN SOUTH STAFFORDSHIRE.—The trade here continues steady, and the idea of changing prices at the preliminary meeting has never been entertained. The reduction of the import duty on iron in America from 30 to 24 per cent. news of which has arrived, will, it is believed, have an important influence on the American demand, as it will amount in round numbers to 10s. per ton on finished iron. The reduced duties, however, do not come into operation till July.

THE "TIME O' DAY."—A correspondent, "G." suggests a revolution in time-telling, which, we agree with him in suspecting, is not very likely to be adopted,—namely, to make the hands stationary and the hours and minutes to pass by them with a regular and continuous movement, the figures being all upright and parallel. The immense advantage of the present method is, that the time can be inferred at a glance from the mere geometrical aspect of the clock-face intersected by its changing hands, and at distances even beyond those at which figures, however bold and distinct, can be readily seen. Our correspondent's object appears to be the obviation of the great weight of the hands in such a clock as the Westminster Palace one, and the prevention of any necessity for 7-inch jumps, such as the minute-hand will take. It is perhaps doubtful, however, whether the public would thank our correspondent even for this latter advantage, as the 7-inch jumps are likely to constitute a never-failing source of curiosity and interest, not only to country cousins, but to the Metropolitans themselves, and will far outvie the wonderful *fact* that every time the stone lion at Northumberland House, Charing-cross, hears St. Martin's strike one, he invariably wags his tail. The 7-inch jumps will be a real and *bona fide* wonder, that need not long be waited for by any one, when they are once set a-going.

CARPET SWEEPER.—The *Scientific American* describes a carpet-sweeping machine, exhibited at the fair of the American Institute in New York. It consists of a small box, in which there is a revolving fan that sucks up all the dust and dirt, and carries it into a small compartment containing water. The woollen fibres and larger particles are deposited in a drawer. The sweeping is done by pushing the box over the surface of the carpet by handles.

[ADVERTISEMENT.]

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For building new Foundry, at Basingstoke, for Messrs. Wallis and Haslem. Quantities supplied by Mr. J. B. Mussellwhite, Architect:—

Nicholls	£1,061 3 7½
Caley and Boardman	1,025 0 0
Prichard	968 10 0
Budden	917 0 0

TO CORRESPONDENTS.

J. A. (if the receipt was not acknowledged the communication did not reach us).—C. B. (we find it dangerous to advise in private disputes on insufficient data. To recover, it would be necessary to prove a contract).—Anti-Corrosion.—C. S. (we have already inserted two replies).—A Lover of Truth (ditto).—W. W. B.—D. M.—T. L. D.—X. Y. (we do not know).—A Subscriber.—J. S.—M. and Co.—C. L.—W. D. B.—W. G. D.—T. W.—F. H.—A. B.—A Provincial Architect.—T. G.—A Competitor.—A Practical Man.—E. B. D.—C. F. D.—C. and B.—G. L.—S.—J. H.—J. P. (we are forced to decline).—J. H. P.—J. A. (the fault of the newsvender).

"*Books and Addresses.*"—We are forced to decline pointing out books or finding addresses.

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